

The University of Chicago

THE RELATION OF THE HOUSING  
OF STUDENTS TO SUCCESS  
IN A UNIVERSITY

A PART OF A DISSERTATION SUBMITTED  
TO THE FACULTY OF THE DIVISION OF  
THE SOCIAL SCIENCES IN CANDIDACY FOR  
THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATION

1934

By  
ERNEST TIMOTHY WALKER

Private Edition, Distributed by  
THE UNIVERSITY OF CHICAGO LIBRARIES  
CHICAGO, ILLINOIS

1935





The University of Chicago

THE RELATION OF THE HOUSING  
OF STUDENTS TO SUCCESS  
IN A UNIVERSITY

A PART OF A DISSERTATION SUBMITTED  
TO THE FACULTY OF THE DIVISION OF  
THE SOCIAL SCIENCES IN CANDIDACY FOR  
THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATION

1934

By  
ERNEST TIMOTHY WALKER

Private Edition, Distributed by  
THE UNIVERSITY OF CHICAGO LIBRARIES  
CHICAGO, ILLINOIS

1935





# TABLE OF CONTENTS

|                                                             | Page |
|-------------------------------------------------------------|------|
| LIST OF TABLES . . . . .                                    | v    |
| LIST OF CHARTS . . . . .                                    | vii  |
| Chapter                                                     |      |
| I. REVIEW OF THE LITERATURE ON STUDENT HOUSING . . . . .    | 1    |
| Types of Student Housing                                    |      |
| Standards for student housing                               |      |
| Living at Home                                              |      |
| Living in Rooming Houses                                    |      |
| Criticisms of rooming houses                                |      |
| Living in Dormitories                                       |      |
| Reasons for dormitories                                     |      |
| Provision for dormitories                                   |      |
| Living in Fraternity and Sorority Houses                    |      |
| Advantages claimed for chapter houses                       |      |
| Criticisms of chapter houses                                |      |
| Student Housing and Scholarship                             |      |
| Significance of the data on scholarship                     |      |
| Conceptions of the Function of Higher Education             |      |
| The aristocratic view                                       |      |
| The democratic view                                         |      |
| Democratic view and student housing                         |      |
| Summary of Literature                                       |      |
| Home                                                        |      |
| Rooming house                                               |      |
| Dormitory                                                   |      |
| Chapter house                                               |      |
| Student housing and scholarship                             |      |
| Conclusions                                                 |      |
| II. PROBLEM AND SCOPE OF THE INVESTIGATION . . . . .        | 12   |
| Relation Between Type of Housing and Success                |      |
| Initial selection                                           |      |
| University success                                          |      |
| Relation of chapter houses to success of fraternity members |      |
| Change of type of housing                                   |      |
| Scope of the Investigation                                  |      |
| Sources of Data                                             |      |
| High School Average Grade                                   |      |
| Psychological Examination                                   |      |
| Age of Students                                             |      |
| Personality Rating                                          |      |

- Personality Schedule
- Education of Parents
- Occupation of Father
- New Plan Students
- Measures of University Success
  - Point-major ratio
  - Quarterly course marks
  - Comprehensive examination grades
  - Present status of students
- Type of Student Housing

### III. COMPARISON OF SUCCESS OF HOUSING GROUPS . . . . . 20

- Number of Quarters Completed
  - Determination of the significance of the data
- Majors Completed per Quarter
- University Average Grade
- Comparison of Housing Groups by Pairing
- Present Academic Status of Housing Groups
  - Determination of significance of present status
- Scholastic Honors
- Student Activities
- Ratings by Students and Faculty
  - Graphic representation
- New Plan Students
  - Quarterly course marks
  - English qualifying examination
  - Attendance and comprehensive examinations
- Chapter Summary
  - Residence hall groups
  - Rooming house groups
  - Home groups
  - Chapter house group
  - Significance of the findings

### IV. INITIAL CHARACTERISTICS OF THE HOUSING GROUPS . . . . . 39

- High School Grades
- Psychological Examination
- High School Personality Rating
- Personality Schedule
- Age of University Entrance
- Education of Parents
- Occupations of the Fathers
  - Significance of measures of characteristics
  - Graphic representation
- Initial Characteristics of New Plan Students
  - High School data
  - Size of high school
  - Kind of high school, age, psychological examination
  - Personality schedule

| Chapter                                                                                        | Page |
|------------------------------------------------------------------------------------------------|------|
| Chapter Summary                                                                                |      |
| Residence hall                                                                                 |      |
| Chapter house                                                                                  |      |
| Rooming house                                                                                  |      |
| Home                                                                                           |      |
| V. COMPARISON OF UNIVERSITY GRADES AND<br>PREDICTED GRADES OF HOUSING GROUPS . . . . .         | 56   |
| High School Grades                                                                             |      |
| Psychological Examination                                                                      |      |
| High School Personality Rating                                                                 |      |
| Prediction by Multiple-Regression<br>Equations                                                 |      |
| Chapter Summary                                                                                |      |
| VI. RELATION OF HOUSING TO SUCCESS OF<br>FRATERNITY MEMBERS . . . . .                          | 67   |
| Summary                                                                                        |      |
| VII. RELATION OF CHANGE OF TYPE OF HOUSING<br>TO UNIVERSITY SUCCESS . . . . .                  | 70   |
| VIII. SUMMARY AND CONCLUSIONS . . . . .                                                        | 73   |
| Review of Literature                                                                           |      |
| Views Toward Education                                                                         |      |
| Success of the Housing Groups                                                                  |      |
| Comparison of the Initial Character-<br>istics and University Success of the<br>Housing Groups |      |
| Relation of chapter houses to the<br>success of fraternity members                             |      |
| Relation of change of type of<br>housing to university success                                 |      |
| Conclusions                                                                                    |      |
| Educational Implications                                                                       |      |
| Further Investigations Needed                                                                  |      |
| APPENDIX . . . . .                                                                             | 77   |
| Classification of Occupations                                                                  |      |
| Statistical Significance                                                                       |      |
| Correlation Ratio                                                                              |      |
| Contingency Coefficient                                                                        |      |
| Prediction by Regression Equations                                                             |      |
| BIBLIOGRAPHY . . . . .                                                                         | 83   |



# LIST OF TABLES

| Table                                                                                                                      | Page |
|----------------------------------------------------------------------------------------------------------------------------|------|
| I. Distribution of Students in Housing Groups<br>by Year of Entrance . . . . .                                             | 18   |
| II. Number of Quarters Completed by Housing Groups . .                                                                     | 21   |
| III. Comparison of Housing Groups on the Basis of<br>Majors Completed per Quarter . . . . .                                | 23   |
| IV. Comparison of Housing Groups on the Basis of<br>University Average Grade . . . . .                                     | 24   |
| V. Comparison of Housing Groups by Pairing on<br>the Basis of Mean Grades . . . . .                                        | 25   |
| VI. Present Academic Status of Housing Groups . . . . .                                                                    | 26   |
| VII. Comparison of Housing Groups Based upon<br>Scholastic Honors . . . . .                                                | 27   |
| VIII. Comparison of Housing Groups Based upon<br>Participation in Student Activities per One<br>Hundred Students . . . . . | 28   |
| IX. Comparison of Housing Groups of Men Based<br>upon Ratings by Students and Faculty . . . . .                            | 29   |
| X. Comparison of Housing Groups under the New Plan<br>Based upon Course Marks per Student . . . . .                        | 33   |
| XI. Comparison of Housing Groups Based upon the<br>English Qualifying Examination . . . . .                                | 33   |
| XII. Comparison of Housing Groups Based upon<br>Attendance and Examinations . . . . .                                      | 34   |
| XIII. Percentage Distribution of High School Grades<br>of the Housing Groups . . . . .                                     | 40   |
| XIV. Percentage Distribution of Psychological<br>Examination Scores of the Housing Groups . . . . .                        | 41   |
| XV. Percentage Distribution of Personality Ratings<br>of the Housing Groups . . . . .                                      | 42   |
| XVI. Percentage Distribution of Personality<br>Schedule Scores of the Housing Groups . . . . .                             | 43   |



| Table                                                                                                                                                                           | Page |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| XVII. Percentage Distribution of Age of University Entrance of the Housing Groups . . . . .                                                                                     | 44   |
| XVIII. Comparison of the Housing Groups Based upon Percentage Distribution of Education of the Parents . . . . .                                                                | 45   |
| XIX. Percentage Distribution of Housing Groups Based upon Occupation of Fathers . . . . .                                                                                       | 46   |
| XX. High School Scholarship of Housing Groups, New Plan . . . . .                                                                                                               | 50   |
| XXI. Size of High School from Which Students Came . . . . .                                                                                                                     | 51   |
| XXII. Kind of High School, Age of Entrance, and Psychological Examination Score, New Plan . . . . .                                                                             | 51   |
| XXIII. Personality Schedule Ratings of Housing Groups . . . . .                                                                                                                 | 52   |
| XXIV. University Grades of Housing Groups Compared with Grades Predicted from High School Grades . . . . .                                                                      | 60   |
| XXV. University Grades of Housing Groups Compared with Grades Predicted from Psychological Examination . . . . .                                                                | 60   |
| XXVI. University Grades of Housing Groups Compared with Grades Predicted from Personality Ratings . . . . .                                                                     | 61   |
| XXVII. University Grades of Housing Groups Compared with Grades Predicted from a Combination of High School Grades, Psychological Examination, and Personality Rating . . . . . | 62   |
| XXVIII. Actual Grades of Men of Housing Groups and Grades Predicted by Use of Regression Equations of Each of the Other Groups . . . . .                                        | 64   |
| XXIX. Differences of Grades of Students as Related to Initial Selection and to Type of Housing . . . . .                                                                        | 65   |
| XXX. Comparison of Fraternity Members in Chapter Houses with Members Outside in Terms of Standard Deviations . . . . .                                                          | 68   |
| XXXI. Relation of Change of Type of Housing to University Grades of Students . . . . .                                                                                          | 70   |
| XXXII. Comparison of Students Who Changed Type of Housing on Time Spent in Each and Average Grade Made . . . . .                                                                | 71   |
| XXXIII. Statistical Significance of a Difference . . . . .                                                                                                                      | 79   |
| XXXIV. Data for Computation of Regression Equations and the Comparison of Housing Groups . . . . .                                                                              | 82   |

# LIST OF CHARTS

| Chart                                                                                                                                                                                      | Page |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1. Ratio of Deviation of Each Housing Group of Men from Total Group on Each Measure of University Success to the Standard Deviation of the Difference of Means . . . . .                   | 31   |
| 2. Ratio of Deviation of Each Housing Group of Women from Total Group on Each Measure of University Success to the Standard Deviation of the Difference of Means . . . . .                 | 32   |
| 3. Ratio of Deviation of Each Housing Group of New Plan Men from Total Group on Each Measure of University Success to the Standard Deviation of Difference of Means . . . . .              | 35   |
| 4. Ratio of Deviation of Each Housing Group of New Plan Women from Total Group on Each Measure of University Success to the Standard Deviation of the Difference of the Means . . . . .    | 36   |
| 5. Ratio of Deviation of Each Housing Group of Men from Total Group on Each Measure of Initial Characteristics to the Standard Deviation of the Difference of Means . . . . .              | 48   |
| 6. Ratio of Deviation of Each Housing Group of Women from Total Group on Each Measure of Initial Characteristics to the Standard Deviation of the Difference of Means . . . . .            | 49   |
| 7. Ratio of Deviation of Each Housing Group of New Plan Men from Total Group on Each Measure of Initial Characteristics to the Standard Deviation of the Difference of the Means . . . . . | 53   |
| 8. Ratio of Deviation of Each Housing Group of New Plan Women from Total on Each Measure of Initial Characteristics to the Standard Deviation of the Difference of the Means . . . . .     | 54   |

## CHAPTER I

### REVIEW OF THE LITERATURE ON STUDENT HOUSING<sup>1</sup>

The literature on the housing of college students is small in amount in comparison with that devoted to other aspects of college life. The usual types of houses for students are private homes, rooming houses owned and managed by private parties, dormitories or residence halls provided and maintained by the institutions, and chapter houses maintained by fraternities and sororities for their members. In this review the attempt has been made to include all the literature which bears upon the housing of students.

Most of the writers who discuss the desirability of some type of housing merely record their opinions based upon personal observation without any exact or comparative data. The home as a type of housing has often been considered detrimental because it tended to narrow social contacts. The rooming house has been pronounced an uncertain factor with questionable influence. The dormitory has been favored by the majority of writers and administrators as a favorable socializing influence whose spread has been hampered by financial considerations. The chapter house has strong advocates and vigorous critics, though it is sometimes impossible in their discussions to distinguish between fraternity or sorority membership and residence in chapter houses.

The evidence given in the literature on the relation between student housing and college success is very meager and indecisive. The usual procedure has been to take the average grades made by the students in the different types of housing without considering the quality of the students making up the groups. However, it is the opinion of most of the observers of college life that there is a relation between the conditions of student housing and the development of the students. The indefinite character of almost all the statements indicates a need for more exact knowledge as a basis for valid conclusions on the comparative desirability of the different types of student housing.

---

<sup>1</sup>The detailed analysis of the literature is given in the complete dissertation which is available in the library of the University of Chicago. The complete dissertation contains also a statistical Appendix and the Bibliography.



## CHAPTER II

### PROBLEM AND SCOPE OF THE INVESTIGATION

#### Relation Between Type of Housing and Success

The attempt is made in this investigation to determine what relation<sup>1</sup> exists between the type of housing used by the students at the University of Chicago and their university success. The review of the literature on student housing has shown that little exact information is available on the relative desirability of the different types of student housing. Most of the statements made are only qualitative and where quantitative data are given they are usually the average of the grades made by different housing groups without consideration of whether the groups were of similar ability. This type of information does not make possible the determination of the relation of housing conditions to success. The only study of student housing found where initial characteristics were equated was the study of freshmen for one quarter by Hubert Beck, referred to in the previous chapter.

This study attempts to furnish exact information as a basis for conclusions on the relation of student housing to university success. To secure this information four different factors have been studied: (1) broad measures of university success, (2) initial selection of housing groups, (3) the relation of chapter houses to the university success of fraternity members, and (4) the relation of change of type of housing to university success. In the consideration of these factors the initial characteristics and the university success of the housing groups have been compared by statistical techniques. These techniques include the pairing of the housing groups, the comparison of university grades with the grades predicted by the use of regression equations, and the determination of the statistical significance of the results. The tests of statistical significance include the ratio of a measure to its standard deviation, the ratio of a difference to the standard deviation of the difference, and the determination of the significance of the grouping by the correlation ratio and contin-

---

<sup>1</sup>"Relation" as used in this study does not imply a causal connection between the two factors but merely that they exist together. Data are not available to prove that an observed change in one is the cause of the change in the other.

gency methods.

Initial selection.- Unless two housing groups have the same or equivalent initial characteristics their comparison by gross averages will not show the relation of housing to success and may be positively misleading. What appears to be the effect of housing may be merely the result of initial differences. To determine the relation of student housing to university success it must be determined either that the groups are equivalent in ability or the factor of initial selection must be isolated or held constant. The method of holding initial ability constant is the one most used in this study, though identical initial ability is used in one comparison. To place initial ability on a broad basis the initial characteristics of the housing groups have been studied by means of seven measures: high school grades, psychological examination scores, high school personality rating, personality schedule, age of entrance, education of parents, and occupation of fathers.

University success.- The success of the students has usually been measured solely by the grades made. Besides these grades, this study has used the length of university attendance, the amount of university work completed, the scholastic honors earned, and the extent of participation in student activities.

Relation of chapter houses to success of fraternity members.- Part of the fraternity members lived in the chapter houses and part of them lived in other types of housing. This made it possible to compare some fraternity members with other fraternity members where the chief difference was the type of student housing, and the factor of fraternity membership was eliminated.

Change of type of housing.- A number of students changed from one type of housing to another during their university residence. This gave the opportunity for the direct comparison of the grades of the same students in different types of housing. The factor of initial characteristics did not enter into this comparison.

#### Scope of the Investigation

This study is based upon the records of 2,574 students who matriculated as freshmen at the University of Chicago during the period beginning with the summer of 1926 and ending with the spring of 1930, and of 771 students who matriculated during the year 1931 under the new plan. Each student who matriculated during these years was investigated, but in order to eliminate the influence of previous college attendance, only those who had never attended any other institution of higher than secondary rank were included. There was no selection of students beyond this. All

for whom the necessary information was available were included and their record taken for the entire period of residence up to June, 1933.

#### Sources of Data

The data for the study were collected from the records of the office of admissions, the bureau of records, the board of examinations, the Dean of Students, and the Cap and Gown. The information used consisted of statements made by the students in their applications for admission, the certificates from the secondary schools, the scores made on the psychological examination and the personality schedule at the time of entrance, and the records made in the University.

#### High School Average Grade

The majority of the secondary schools from which the students came had passing marks of 75. The average for those schools which had passing marks of 80, 70, 65, or 60 were computed on the basis of a passing mark of 75 in order to make them directly comparable. The office of admissions averaged grades which were given in letters by assigning numerical values and the same practice was followed in this study. For example, the grades given in the Chicago high schools were computed: S, 96.5; E, 89.5; G, 83.5; and F (fair), 77.5. This is an approximation, but the average of twenty-five or more semester grades of a student would have little error. There were no grades for students from the University of Chicago High School and there were some others with grades of such a nature that they could not be averaged with reasonable certainty.

At the time of admission of the old plan students of this investigation, the standard for admission required "an average in academic subjects higher than the passing mark of the school by 25 per cent of the difference between the passing mark and 100." This meant that the minimum high school grade accepted for entrance was 81.25. There were, however, some students with high school averages somewhat below this who were admitted because of good scores on the psychological examination. The high school averages were available for 2,339 students under the old plan and 555 under the new plan.

#### Psychological Examination

Those who entered in the autumn quarters were required to take the psychological examination prepared by the National Research Council. Those entering at other times were not required to take this examination except in certain cases where additional information was called for as a condition for admission. The records for the old plan students were reduced to the basis of the



1928 scores to render them comparable. This was done by taking the 1928 scores corresponding to the percentiles in which the records were made on the permanent cards. These were available for 2,192 students. The 1931 scores were available for 669 students.

#### Age of Students

The attained age of the student was obtained by subtracting the date of birth from the date of entrance. The age used was the age at the last birthday. The data were given by 3314 students.

#### Personality Rating

The personality rating used in this study was made by the high school principals or teachers who were acquainted with the students. In most cases it was the judgment of one person, but sometimes it was the average of two or more ratings of the same student. The rating consisted of an estimate on each of six qualities: scholastic zeal, intellectual ability and aptitude, initiative, integrity, leadership, and social adaptability. For this study it seemed advisable to reduce these to a single measure. An average was made of the six ratings considered as of equal weight and this expressed in numerical form. The descriptive words or phrases apparently extended farther toward the undesirable qualities than any of the teachers thought applicable to their students. The lower 30 per cent of the scale was unused and only 61 of 1,827 were in the lower half.

#### Personality Schedule

The personality schedule was filled out by the students at the time of entrance to the University. This was available for 618 students who entered in 1929 and 676 new plan students who entered in 1931.

#### Education of Parents

The education of the parents was determined from the statements of the students in their applications for admission. These indicated whether each parent had graduated from college, had attended college, had graduated from high school, or had not graduated from high school. This information was furnished by over 2,400 students. The statements were taken at face value except under a few conditions; for example, graduation from a business college was not considered as college graduation, neither was graduation from a normal school unless the school maintained a four-year course at that time. A weakness of the data was that there was no differentiation between parents who attended college for a short time only and those who lacked little of graduation.

Similarly, there was nothing in the data to differentiate those with very little or even no education from those who had nearly completed high school.

#### Occupation of Father

Each student stated the occupation of his father in his application for admission. For the classification of these occupations the grouping adopted by Counts in The Selective Character of American Secondary Education as modified by Potthoff in his doctoral dissertation was used. Some of the occupations reported by the students were not included in the original classification and were added. The divisions used in the classification are given in the Appendix. The information was given by 2,393 students. The professional class made up 22 per cent of the total, the proprietors 21, the commercial 17, skilled tradesmen 16, the managerial 12, the clerical 4, and the other occupations combined made up 8 per cent.

#### New Plan Students

The students who matriculated in 1931 were registered under the "New Plan." The essential characteristics of this plan which differentiate it from the old plan are: enrollment and attendance in any class are optional with the student; the usual time limits and quantity of work limits are removed; the completion of the work of "the college" is determined by passing successfully comprehensive examinations in English, in four general courses, biological science, physical science, humanities, and social science, and in two additional sequences.

#### Measures of University Success

Point-major ratio.- The chief measure of scholastic success for the old plan students was the average university grade earned. It was not possible to combine the grades directly, so grade point values were used by the University. Each grade of "A" was given 6 points, "B" 4 points, "C" 2 points, "D" 0 points, and "F" minus 2 points. The sum of the grade points was divided by the number of majors taken and the quotient was the point-major ratio. The highest possible ratio was 6 and the lowest was minus 2. Wherever the term "university average" is applied to the old plan students it refers to the point-major ratio.

Quarterly course marks.- The course marks under the new plan are given as satisfactory, unsatisfactory, or merely as registered for the course with no implications as to the quality of the work done. There is no way of comparing these except as to the number of each mark received.

Comprehensive examination grades.- Each student under the

new plan is required to pass comprehensive examinations in the four general courses, in two additional sequence courses, and in English before being certified for the completion of the work of the college. These examinations are graded "A," "B," "C," "D," and "F." These grades are not comparable with similar grades under the old plan for "D" is now an acceptable grade instead of "C" under the old plan, and it has been found that there are different percentage distributions of these grades under the new plan than there were under the old plan. However, for the comparison of the housing groups within the class the same point values have been used as under the old plan.

Present status of students.- Forty-one per cent of the old plan students had graduated at the time this study was made, nine per cent were in residence, twenty-seven per cent had withdrawn in good standing, twelve per cent had withdrawn while on probation for poor work, and eleven per cent had been dismissed on account of poor work. The standards for university continuance were: (1) if the number of grade points fell ten below the number necessary for a point-major ratio of 2, the student was automatically dropped; (2) if at any time he dropped below the ratio of 2, he was placed on probation. If he remained on probation for three quarters without materially reducing the deficiency in grade points he was subject to dismissal for poor work at the discretion of the scholarship board. The average student had been in residence 7.8 quarters. During this time he had completed 2.6 majors per quarter. He had also failed to complete 0.9 major during his period of residence.

Thirty per cent of the new plan students had finished the work of the college in the two years studied. The average student had been in residence 4.7 quarters and had passed 3.7 comprehensive examinations. Fifty-eight per cent of them had passed the English qualifying examination.

#### Type of Student Housing

The information on the housing of students was obtained from the registration cards. New cards were made out each quarter so it was necessary to check the cards for each term the students were in residence. It was decided to classify housing into four types: home, rooming house, fraternity chapter house, and university residence hall. Since the investigation was concerned with the relation between housing and success, no attempt was made to study membership in any organization. The majority of the members of the fraternities at the University of Chicago did not reside in the chapter houses and the women's clubs did not have houses.

If the university residence and the home residence given



on the registration cards were the same, it was assumed that the student was living at home. The residence halls of the University were easily identified. The chapter houses presented a greater difficulty. A number of the students gave the chapter house addresses when they were actually living at home. This made it necessary to check all who gave chapter house addresses against the fraternity lists which were filed with the university registrar each quarter. On these lists those living in the chapter houses were starred. This record was taken rather than the statements of the students. The rooming house group included all who were not in one of the other types of housing.

The majority of the students remained in the same type of housing while enrolled in the University. Of the total of 3,345 students investigated, 382 lived in rooming houses for the entire time of university residence, 339 in fraternity chapter houses, 2,136 at home, 263 in residence halls, and 225 changed type of housing. To determine whether there were material changes in the proportion of students from each class who remained in each type of housing for the entire time, they were classified by year of entrance. The data are given in Table I.

TABLE I  
DISTRIBUTION OF STUDENTS IN HOUSING  
GROUPS BY YEAR OF ENTRANCE

| Year      | Rooming House |      | Chapter House |      | Home |      | Residence Hall |      | Changed Housing |      | Total |
|-----------|---------------|------|---------------|------|------|------|----------------|------|-----------------|------|-------|
|           | No.           | %    | No.           | %    | No.  | %    | No.            | %    | No.             | %    |       |
| Men       |               |      |               |      |      |      |                |      |                 |      |       |
| 1926-27   | 44            | 12.6 | 71            | 20.2 | 205  | 58.6 | 9              | 2.6  | 21              | 6.0  | 350   |
| 1927-28   | 33            | 9.0  | 68            | 18.7 | 215  | 58.9 | 15             | 4.1  | 34              | 9.3  | 365   |
| 1928-29   | 41            | 11.6 | 64            | 18.0 | 212  | 59.7 | 12             | 3.4  | 26              | 7.3  | 355   |
| 1929-30   | 37            | 9.3  | 76            | 19.1 | 251  | 63.3 | 11             | 2.8  | 22              | 5.5  | 397   |
| Av. 26-30 | ..            | 10.6 | ..            | 19.0 | ...  | 60.2 | ..             | 3.2  | ..              | 7.0  | ....  |
| 1931-32   | 23            | 5.2  | 60            | 13.5 | 248  | 56.0 | 58             | 13.1 | 54              | 12.2 | 443   |
| Total     | 178           | .... | 339           | .... | 1131 | .... | 105            | .... | 157             | .... | 1910  |
| Women     |               |      |               |      |      |      |                |      |                 |      |       |
| 1926-27   | 37            | 15.6 | ...           | .... | 171  | 72.2 | 20             | 8.4  | 9               | 3.8  | 237   |
| 1927-28   | 48            | 17.7 | ...           | .... | 189  | 69.8 | 25             | 9.2  | 9               | 3.3  | 271   |
| 1928-29   | 37            | 13.7 | ...           | .... | 188  | 69.7 | 30             | 11.1 | 15              | 5.5  | 270   |
| 1929-30   | 45            | 14.0 | ...           | .... | 232  | 70.5 | 38             | 11.5 | 13              | 4.0  | 328   |
| Av. 26-30 | ..            | 15.3 | ...           | .... | ...  | 70.4 | ..             | 10.2 | ..              | 4.1  | ...   |
| 1931-32   | 36            | 11.0 | ...           | .... | 225  | 68.6 | 45             | 13.7 | 22              | 6.7  | 328   |
| Total     | 204           | .... | ...           | .... | 1005 | .... | 158            | .... | 68              | .... | 1435  |

The information for the students who entered in 1931 is for two years only. The other students were investigated for four calendar years or more - from the time of entrance to June, 1933. There were no material changes in the proportion in each type of housing for the students who entered under the old plan in the years 1926, 1927, 1928, and 1929. These students have been considered together in the remainder of the study. There were considerable differences in the proportion of the old plan students in the different types of housing and the proportion of the students who entered in 1931. There was a decrease in the proportion in the rooming houses and the fraternity chapter houses and an increase in the proportion in the university residence halls and of those who changed type of housing. The differences were the most marked among the men. About one-half as large a proportion of men of the class entering in 1931 were in the rooming houses as in the other classes investigated, the proportion in the residence hall was four times as great, and the proportion who changed type of housing was twice as great. Since the data are for the entire time of residence up to June, 1933, the proportion in the different types of housing would not be increased if information on the class entering in 1931 were collected for two years more, but the proportion in the changed housing group would probably be somewhat increased. The class entering in 1931 has been considered separately.

## CHAPTER III

### COMPARISON OF SUCCESS OF HOUSING GROUPS

The object of this chapter is to compare the housing groups on the different measures of success and to secure a general view of the situation. This comparison does not measure the relation of the types of housing to university success because it does not take into account the initial quality of the groups of students, but it serves as an introduction to the more exact comparisons which follow. The measures of success used are the number of quarters attended, the number of majors completed per quarter, the average university grades, the present academic status of the students, the scholastic honors received, and the extent of participation in student activities. For the new plan students the measures used are the number of quarters attended, the percentage passing the English qualifying examination, the average grade on the English qualifying examination, the number of comprehensive examinations passed, the average grade on the comprehensive examinations, and the percentage completing the work of the college within two years. The old plan students are considered first.

#### Number of Quarters Completed

The data for the comparison of the housing groups on the number of quarters completed are given in Table II. The residence hall group of men attended an average of 9 quarters and the rooming house group of men attended 6.35 quarters. Similarly, the residence hall group of women attended an average of 8.31 quarters and the rooming house group attended 5.64 quarters. The home group of men attended 8.10 quarters and the chapter house 7.88 quarters. Fifty-three per cent of the residence hall group of the men attended over 9 quarters and 32 per cent of the rooming house group. Apparently those who lived in the university residence halls remained in residence longer than those in other types of housing, the difference from the time of the rooming house students being large.

Determination of the significance of the data.- To determine whether the variations among the housing groups were greater than might have been expected from the variations within the groups, the correlation ratio has been used. The explanation of the computation of the ratio and the index of significance are given in the Appendix. If the index of significance is small it indicates that the differences among the groups are not significant, but are accountable for by chance factors. With a different



TABLE II  
NUMBER OF QUARTERS COMPLETED BY HOUSING GROUPS

| Number of<br>Quarters | Rooming<br>House | Chapter<br>House | Home | Residence<br>Hall | Changed<br>Housing | Total |
|-----------------------|------------------|------------------|------|-------------------|--------------------|-------|
| Men                   |                  |                  |      |                   |                    |       |
| 13.....               | 12               | 18               | 86   | 4                 | 16                 | 136   |
| 12.....               | 27               | 64               | 206  | 16                | 27                 | 340   |
| 11.....               | 11               | 24               | 95   | 5                 | 18                 | 153   |
| 10.....               | 6                | 19               | 48   | 3                 | 6                  | 82    |
| 9.....                | 3                | 21               | 61   | 4                 | 9                  | 98    |
| 8.....                | 1                | 11               | 37   | ....              | 4                  | 53    |
| 7.....                | 7                | 5                | 27   | ....              | 5                  | 44    |
| 6.....                | 5                | 27               | 43   | 4                 | 9                  | 88    |
| 5.....                | 5                | 13               | 33   | 2                 | 3                  | 56    |
| 4.....                | 12               | 12               | 33   | 3                 | 4                  | 64    |
| 3.....                | 28               | 39               | 89   | 2                 | 2                  | 160   |
| 2.....                | 14               | 13               | 52   | 2                 | ....               | 81    |
| 1.....                | 24               | 13               | 73   | 2                 | ....               | 112   |
| Total....             | 155              | 279              | 883  | 47                | 103                | 1467  |
| Mean.....             | 6.35             | 7.88             | 8.10 | 9.00              | 9.99               | 8.03  |
| SD.....               | 4.46             | 3.92             | 4.15 | 3.78              | 2.79               | 4.12  |
| Over 9 Q.             | 32%              | 38%              | 44%  | 53%               | 59%                | 43%   |
| Women                 |                  |                  |      |                   |                    |       |
| 13.....               | 13               | ....             | 62   | 2                 | 3                  | 80    |
| 12.....               | 25               | ....             | 200  | 33                | 13                 | 271   |
| 11.....               | 7                | ....             | 67   | 16                | 13                 | 102   |
| 10.....               | 3                | ....             | 22   | 10                | 3                  | 38    |
| 9.....                | 4                | ....             | 30   | 4                 | 6                  | 44    |
| 8.....                | 4                | ....             | 21   | 4                 | 2                  | 31    |
| 7.....                | 3                | ....             | 21   | 2                 | ....               | 26    |
| 6.....                | 5                | ....             | 43   | 9                 | 2                  | 59    |
| 5.....                | 7                | ....             | 38   | 4                 | 2                  | 51    |
| 4.....                | 6                | ....             | 34   | 6                 | ....               | 46    |
| 3.....                | 43               | ....             | 110  | 18                | 1                  | 172   |
| 2.....                | 16               | ....             | 49   | 2                 | 1                  | 68    |
| 1.....                | 32               | ....             | 84   | 3                 | ....               | 119   |
| Total....             | 168              | ....             | 780  | 113               | 46                 | 1107  |
| Mean.....             | 5.64             | ....             | 7.48 | 8.31              | 10.11              | 7.39  |
| SD.....               | 4.38             | ....             | 4.38 | 3.76              | 2.61               | 4.32  |
| Over 9 Q.             | 27%              | ....             | 42%  | 45%               | 63%                | 41%   |

sampling from the larger population the difference might be reduced to zero. If the index is large it indicates that there are basic differences among the groups, differences which cannot be at-

tributed to chance factors. In such cases there is little chance that a different sampling would materially change the differences. There is no certain point above which a difference is significant and below which it is not significant, but it is usually considered that the index should be about 3.0 to insure the significance of the findings. This means that the chances are 740 to 1 that the observed differences are not the result of chance. The chances for other values are given in the Appendix.

This technique was applied to the housing groups of the men as a sample of the whole number because they had the largest number of students and were divided into more groups than were the women. The index of significance for the data of Table II was 17.06, or that the chances were many millions to one that the differences were significant and not the result of chance. There were basic differences either in the quality of the students making up the groups or in the quality of the types of housing.

#### Majors Completed Per Quarter

Data on the number of majors completed per quarter by each of the housing groups are given in Table III. The residence hall groups of both men and women completed the highest average number of majors per quarter and the rooming house groups the lowest. To determine whether the differences among the groups might be the result of chance factors, the correlation ratio technique was applied. The index of significance was 14.76, which showed that there was no possibility that the differences were the result of chance.

#### University Average Grade<sup>1</sup>

The data for the comparison of the housing groups in scholarship are given in Table IV. The residence hall groups made the highest average of the constant housing groups and the rooming house groups the lowest. The chapter house group ranked below the home group of the men. To test the significance of the differences the correlation ratio technique was again used. The index of significance was 13.32. Therefore, on the number of quarters completed, the number of majors completed per quarter, and the average grade made, the differences among the housing groups were significant. There was no possibility that they were due to chance but must have been due to differences in the quality of the groups or in the types of housing.

---

<sup>1</sup>"Grade" means the point-major ratio as defined on page 16.

TABLE III  
COMPARISON OF HOUSING GROUPS ON THE BASIS  
OF MAJORS COMPLETED PER QUARTER

| Majors<br>per<br>Quarter | Rooming<br>House | Chapter<br>House | Home | Residence<br>Hall | Changed<br>Housing | Total |
|--------------------------|------------------|------------------|------|-------------------|--------------------|-------|
| Men                      |                  |                  |      |                   |                    |       |
| 3.3.....                 | 2                | 5                | 33   | 4                 | 4                  | 48    |
| 3.0-3.2....              | 63               | 132              | 406  | 30                | 56                 | 687   |
| 2.7-2.9....              | 12               | 50               | 114  | 7                 | 20                 | 203   |
| 2.4-2.6....              | 16               | 33               | 119  | 2                 | 13                 | 183   |
| 2.1-2.3....              | 12               | 21               | 49   | 1                 | 4                  | 87    |
| 1.8-2.0....              | 15               | 15               | 67   | 1                 | 2                  | 100   |
| 1.5-1.7....              | 12               | 13               | 28   | ...               | 2                  | 55    |
| 1.2-1.4....              | 4                | ...              | 12   | ...               | 2                  | 18    |
| .9-1.1....               | 6                | 5                | 23   | 2                 | ...                | 36    |
| .6- .8....               | ...              | 1                | 1    | ...               | ...                | 2     |
| .3- .5....               | 2                | ...              | 7    | ...               | ...                | 9     |
| .0- .2....               | 11               | 4                | 24   | ...               | ...                | 39    |
| Total..                  | 155              | 279              | 883  | 47                | 103                | 1467  |
| Mean...                  | 2.39             | 2.74             | 2.67 | 2.97              | 2.91               | 2.69  |
| SD.....                  | .92              | .60              | .72  | .48               | .42                | .68   |
| Women                    |                  |                  |      |                   |                    |       |
| 3.3.....                 | 4                | ...              | 19   | 10                | 2                  | 35    |
| 3.0-3.2....              | 60               | ...              | 378  | 70                | 29                 | 537   |
| 2.7-2.9....              | 13               | ...              | 94   | 14                | 3                  | 124   |
| 2.4-2.6....              | 19               | ...              | 90   | 5                 | 4                  | 118   |
| 2.1-2.3....              | 15               | ...              | 45   | 6                 | 3                  | 69    |
| 1.8-2.0....              | 22               | ...              | 63   | 3                 | ...                | 88    |
| 1.5-1.7....              | 6                | ...              | 28   | 4                 | 5                  | 43    |
| 1.2-1.4....              | 4                | ...              | 9    | ...               | ...                | 13    |
| .9-1.1....               | 13               | ...              | 26   | ...               | ...                | 39    |
| .6- .8....               | 1                | ...              | 3    | ...               | ...                | 4     |
| .3- .5....               | 2                | ...              | 10   | ...               | ...                | 12    |
| .0- .2....               | 9                | ...              | 15   | 1                 | ...                | 55    |
| Total..                  | 168              | ...              | 780  | 113               | 46                 | 1107  |
| Mean...                  | 2.36             | ...              | 2.66 | 2.95              | 2.87               | 2.66  |
| SD.....                  | .89              | ...              | .73  | .49               | .51                | .74   |

#### Comparison of Housing Groups by Pairing

The housing groups were further compared by pairing each group with each of the others on the basis of mean grades. The data are given in Table V. The column headed  $M_1$  gives the mean grade for the first member of each pair and the column headed  $M_2$



TABLE IV  
COMPARISON OF HOUSING GROUPS ON THE BASIS  
OF UNIVERSITY AVERAGE GRADE

| University<br>Average | Rooming<br>House | Chapter<br>House | Home | Residence<br>Hall | Changed<br>Housing | Total |
|-----------------------|------------------|------------------|------|-------------------|--------------------|-------|
| Men                   |                  |                  |      |                   |                    |       |
| 5.4 - 6.0...          | 1                | 3                | 11   | ...               | 5                  | 20    |
| 4.8 - 5.3...          | 4                | 8                | 47   | 13                | 6                  | 78    |
| 4.2 - 4.7...          | 15               | 14               | 64   | 6                 | 8                  | 107   |
| 3.6 - 4.1...          | 15               | 29               | 96   | 6                 | 17                 | 163   |
| 3.0 - 3.5...          | 27               | 39               | 140  | 7                 | 20                 | 233   |
| 2.4 - 2.9...          | 27               | 66               | 168  | 8                 | 24                 | 293   |
| 1.8 - 2.3...          | 21               | 53               | 161  | ...               | 16                 | 251   |
| 1.2 - 1.7...          | 11               | 32               | 66   | 4                 | 4                  | 117   |
| 0.6 - 1.1...          | 13               | 17               | 46   | 1                 | 1                  | 78    |
| 0.0 - 0.5...          | 8                | 11               | 44   | 1                 | 2                  | 66    |
| -.6 - -.1...          | 1                | 2                | 11   | ...               | ...                | 14    |
| ... - -.7...          | 12               | 5                | 29   | 1                 | ...                | 47    |
| Total...              | 155              | 279              | 883  | 47                | 103                | 1467  |
| Mean....              | 2.44             | 2.56             | 2.65 | 3.57              | 3.24               | 2.68  |
| SD.....               | 1.56             | 1.25             | 1.42 | 1.44              | 1.14               | 1.41  |
| Women                 |                  |                  |      |                   |                    |       |
| 5.4 - 6.0...          | ...              | ...              | 3    | ...               | ...                | 3     |
| 4.8 - 5.3...          | 2                | ...              | 21   | 7                 | 3                  | 33    |
| 4.2 - 4.7...          | 9                | ...              | 58   | 13                | 3                  | 83    |
| 3.6 - 4.1...          | 16               | ...              | 100  | 23                | 11                 | 150   |
| 3.0 - 3.5...          | 24               | ...              | 155  | 22                | 5                  | 206   |
| 2.4 - 2.9...          | 27               | ...              | 166  | 24                | 21                 | 238   |
| 1.8 - 2.3...          | 34               | ...              | 118  | 13                | 1                  | 166   |
| 1.2 - 1.7...          | 24               | ...              | 63   | 4                 | 2                  | 93    |
| 0.6 - 1.1...          | 12               | ...              | 43   | 5                 | ...                | 60    |
| 0.0 - 0.5...          | 8                | ...              | 34   | 1                 | ...                | 43    |
| -.6 - -.1...          | 2                | ...              | 4    | ...               | ...                | 6     |
| ... - -.7...          | 10               | ...              | 15   | 1                 | ...                | 26    |
| Total...              | 168              | ...              | 780  | 113               | 46                 | 1107  |
| Mean....              | 2.24             | ...              | 2.71 | 3.17              | 3.26               | 2.71  |
| SD.....               | 1.37             | ...              | 1.18 | 1.13              | 0.85               | 1.28  |

for the second member. The next column gives the difference between the two means and the last column gives the ratio of this difference to the standard deviation of the difference of the means. This is the measure of the significance of the difference.

The differences between the means of the residence hall

TABLE V  
COMPARISON OF HOUSING GROUPS BY PAIRING  
ON THE BASIS OF MEAN GRADES

|                                  | M <sub>1</sub> | M <sub>2</sub> | M <sub>1</sub> -M <sub>2</sub> | Ratio |
|----------------------------------|----------------|----------------|--------------------------------|-------|
| Men                              |                |                |                                |       |
| Rooming House - Chapter House... | 2.44           | 2.56           | -0.12                          | 0.9   |
| Home - Chapter House.....        | 2.65           | 2.56           | 0.09                           | 1.0   |
| Home - Rooming House.....        | 2.65           | 2.44           | 0.21                           | 1.6   |
| Residence Hall - Chapter House.. | 3.57           | 2.56           | 1.01                           | 4.1   |
| Residence Hall - Rooming House.. | 3.57           | 2.44           | 1.13                           | 4.6   |
| Residence Hall - Home.....       | 3.57           | 2.65           | 0.92                           | 4.3   |
| Women                            |                |                |                                |       |
| Home - Rooming House.....        | 2.71           | 2.24           | 0.47                           | 4.1   |
| Residence Hall - Rooming House.. | 3.17           | 2.24           | 0.93                           | 6.2   |
| Residence Hall - Home.....       | 3.17           | 2.71           | 0.46                           | 4.0   |

and the rooming house groups of men and women, between the residence hall and home groups of men and women, between the residence hall and chapter house groups of men, and between the home and rooming house groups of women were significant. The chances were over 30,000 to 1 that a different sampling would not remove the differences. The differences between the other groups were not significant.

#### Present Academic Status of Housing Groups

The present academic status of the members of the housing groups is shown in Table VI. This includes the percentage dismissed on account of poor work, the percentage who withdrew while on probation for poor work, the percentage who withdrew while in good standing, the percentage still in residence, the percentage who had graduated, and the percentage who had enrolled in the university for additional work after graduation, either in the graduate or professional schools. The residence hall groups of men and women had smaller percentages of their members dismissed for poor work or who withdrew while on probation than had the others and had larger percentages of members who had graduated and who had enrolled for graduate or professional work after graduation. The rooming house groups were high on the percentage dismissed for poor work and on the percentage who withdrew while on probation, and low on the percentage who had graduated.

TABLE VI  
PRESENT ACADEMIC STATUS OF HOUSING GROUPS

| Housing Group  | Dismissed<br>Poor Work | Withdrew<br>Probation | Withdrew<br>Good<br>Standing | In<br>Resi-<br>dence | Grad-<br>uated | Graduate<br>Work |
|----------------|------------------------|-----------------------|------------------------------|----------------------|----------------|------------------|
| Men            |                        |                       |                              |                      |                |                  |
| Rooming House. | 16.2%                  | 14.2%                 | 34.2%                        | 6.4%                 | 29.0%          | 14.8%            |
| Chapter House. | 12.6                   | 12.8                  | 27.6                         | 7.2                  | 39.8           | 14.3             |
| Home.....      | 13.2                   | 10.8                  | 23.8                         | 9.5                  | 42.7           | 22.4             |
| Residence Hall | 8.5                    | 6.4                   | 14.9                         | 12.8                 | 55.3           | 25.5             |
| Total.....     | 12.6%                  | 10.8%                 | 25.4%                        | 8.8%                 | 42.4%          | 23.3%            |
| Women          |                        |                       |                              |                      |                |                  |
| Rooming House. | 8.5%                   | 26.4%                 | 36.4%                        | 3.7%                 | 25.0%          | 7.2%             |
| Home.....      | 8.5                    | 13.0                  | 28.5                         | 8.6                  | 41.4           | 12.8             |
| Residence Hall | 7.1                    | 7.1                   | 28.4                         | 8.9                  | 48.5           | 25.6             |
| Total.....     | 8.0%                   | 13.9%                 | 29.7%                        | 7.8%                 | 40.6%          | 12.6%            |

Determination of significance of present status.- There are no quantitative differences in the different categories of academic status so that a different technique was necessary for the determination of the significance of the differences. The measure used is Pearson's coefficient of mean square contingency. The explanation of the computation is given in the Appendix. The index of significance was 11.7. This gave positive evidence that the differences were not the result of chance, but must have been either the result of differences in the quality of the groups or the result of differences in the types of housing.

#### Scholastic Honors

The data for the comparison of the housing groups on the basis of the number of scholastic honors earned are given in Table VII. The chief scholastic honors are Honorable Mention for Excellence in Junior College Work, Phi Beta Kappa, Sigma Xi, Honor Scholar, and Degree with Honors in some department. The junior college award is given more frequently than any other. No attempt has been made to evaluate these honors except to separate out those above the junior college. The residence hall groups had the highest number of honors per one hundred students, both of the total and of those above the junior college. The chapter house group of the men and the rooming house group of the women had the smallest number.

TABLE VII  
COMPARISON OF HOUSING GROUPS BASED  
UPON SCHOLASTIC HONORS

| Housing Groups      | Number of Honors<br>Per 100 Students | Number of Honors<br>Above Junior College<br>Per 100 Students |
|---------------------|--------------------------------------|--------------------------------------------------------------|
| Men                 |                                      |                                                              |
| Rooming House.....  | 31                                   | 12                                                           |
| Chapter House.....  | 28                                   | 10                                                           |
| Home.....           | 44                                   | 18                                                           |
| Residence Hall..... | 103                                  | 57                                                           |
| Total.....          | 42                                   | 17                                                           |
| Women               |                                      |                                                              |
| Rooming House.....  | 19                                   | 8                                                            |
| Home.....           | 29                                   | 11                                                           |
| Residence Hall..... | 47                                   | 20                                                           |
| Total.....          | 30                                   | 12                                                           |

#### Student Activities

In this study no attempt has been made to secure a complete list of student activities or a complete list of participants, for it would be very difficult to make it inclusive. The activities and participants considered were those published in Cap and Gown, the student annual. These were representative activities and were probably a fair sampling of the total participation. Some activities were doubtless more important than others and took more time and energy, but they were not rated in this study beyond a general classification. Publications included such as the Daily Maroon, Cap and Gown, the Phoenix, Circle, and La Critique; managerial included such as student boards, councils, and commissions; aesthetic included such as dramatic and musical organizations; social service and religion such as Y.M.C.A., Y.W.C.A., chapel council, settlement, and commission on social service and religion; athletic included such as football, basketball, track, tennis, swimming, wrestling, and hockey; and the honorary included such as Owl and Serpent, Nu Pi Sigma, Iron Mask, Skull and Crescent, Crossed Cannon, Epsilon Alpha, Eta Sigma Phi, Gamma Alpha, Kappa Epsilon Pi, Kappa Mu Sigma, Marshal, and Aide. The data are given in Table VIII, stated in the number of activities participated in by each housing group per one hundred stu-



TABLE VIII  
COMPARISON OF HOUSING GROUPS BASED UPON  
PARTICIPATION IN STUDENT ACTIVITIES  
PER ONE HUNDRED STUDENTS

| Housing Groups   | Publi-<br>cations | Mana-<br>gerial | Aes-<br>thetic | Social<br>Service | Ath-<br>letic | Honor-<br>ary | Total |
|------------------|-------------------|-----------------|----------------|-------------------|---------------|---------------|-------|
| Men              |                   |                 |                |                   |               |               |       |
| Rooming House... | 1.9               | 1.3             | 3.9            | 1.3               | 3.2           | 1.9           | 13.5  |
| Chapter House... | 3.9               | 5.7             | 7.2            | 2.2               | 9.3           | 12.5          | 40.8  |
| Home.....        | 3.4               | 3.2             | 6.6            | 1.5               | 6.7           | 5.9           | 27.3  |
| Residence Hall.. | 12.8              | 12.8            | 8.5            | 2.1               | 12.8          | 17.0          | 66.0  |
| Total.....       | 3.8               | 3.7             | 6.5            | 1.6               | 7.5           | 7.2           | 30.3  |
| Women            |                   |                 |                |                   |               |               |       |
| Rooming House... | 2.4               | 1.8             | 4.2            | 3.6               | 2.4           | 4.2           | 18.5  |
| Home.....        | 2.3               | 4.7             | 4.0            | 6.9               | 6.2           | 3.7           | 27.8  |
| Residence Hall.. | 5.3               | 15.0            | 10.6           | 7.1               | 6.2           | 10.6          | 54.8  |
| Total.....       | 2.5               | 5.6             | 4.6            | 6.3               | 5.6           | 4.5           | 29.1  |

dents. The residence hall groups of both men and women ranked the highest in the number of activities per hundred students in each of the activities and in the total. The rooming house group of the men ranked lowest of the men in the total and in each of the classifications. The chapter house group of the men ranked second to the residence hall group of the men. The rooming house group of the women ranked the lowest of the women on the total and on most of the classifications. To determine the significance of the differences among the housing groups the contingency technique was used. The index of significance was 8.2, which demonstrated that the differences were not the result of chance sampling, but were significant differences.

The rooming house group of men had a low percentage of their activities in the publications and honorary type and a high percentage in the aesthetic. The chapter house group had a low percentage of their activities in the publications and a high percentage in the honorary type. The residence hall group of men had a low percentage in the aesthetic type and a high percentage in the publications and managerial. The rooming house group of women ranked low in the managerial and athletic types and high in aesthetic and honorary. The residence hall group of women ranked high in managerial, aesthetic, and honorary.

### Ratings by Students and Faculty

The students who had conferences with the Dean of Students were asked to fill out the Student's Analysis Blank. Their judgment on the quality of their study conditions, the quality of their study habits, the effectiveness of their use of time, and the degree of interference of outside work with their university work was collected for 160 men of the class that entered in 1929. The ratings of 340 men of the same class by members of the university faculty were also collected. For convenience in comparing these ratings the highest rating was given a value of five and the lowest a value of one, since there were five steps in the ratings. The highest ratings were given for excellent study conditions, excellent use of time, excellent study habits, and no interference by outside work. The averages are given in Table IX.

TABLE IX  
COMPARISON OF HOUSING GROUPS OF MEN BASED UPON  
RATINGS BY STUDENTS AND FACULTY

| Housing Group    | Study<br>Condi-<br>tions | Study<br>Habits | Use of<br>Time | Freedom<br>from Inter-<br>ference<br>by Work | Average<br>Rating | Faculty<br>Rating |
|------------------|--------------------------|-----------------|----------------|----------------------------------------------|-------------------|-------------------|
| Rooming House... | 3.60                     | 3.21            | 3.06           | 3.71                                         | 3.39              | 4.06              |
| Chapter House... | 3.18                     | 4.07            | 3.07           | 3.84                                         | 3.54              | 4.20              |
| Home.....        | 3.49                     | 3.76            | 3.26           | 3.91                                         | 3.61              | 4.09              |
| Residence Hall.. | 3.50                     | 4.00            | 3.37           | 4.40                                         | 3.72              | 4.31              |
| Total.....       | 3.41                     | 3.81            | 3.21           | 3.87                                         | 3.58              | 4.12              |

The judgments of the groups varied widely on different points. The rooming house group rated their study conditions high but their study habits and use of time low. The chapter house group rated their study conditions low but their study habits high. The residence hall group rated their use of time and freedom from interference due to outside work high. The reliability of these ratings is low but they are of value in showing student opinion. The average of the four ratings gave the highest place to the residence hall group and the lowest to the rooming house group. The home group averaged higher than the chapter house group. The average of the ratings by the faculty placed the residence hall group highest, the chapter house group second, the home group third, and the rooming house group lowest.

Graphic representation.- The comparisons of the housing groups on the number of quarters completed, the number of majors completed per quarter, the average university grade, the percentage still in residence, the percentage who had graduated, the percentage who enrolled for additional work after graduation, the number of scholastic honors, and the extent of participation in student activities are shown graphically in Charts 1 and 2. The quantities shown are ratios, found by finding the deviation of the mean of each group from the mean of the total and dividing this deviation by the standard deviation of the difference of the means. The means were considered uncorrelated.

Since the values shown are ratios they are measures of significance. If a value is as great as 3.0 it shows that on that measure the housing group deviated significantly from the mean of the total. Positive deviations are above the mean and negative below. Ratios are not drawn on the charts to exceed 18.0, though some of them are greater, as shown on the left.

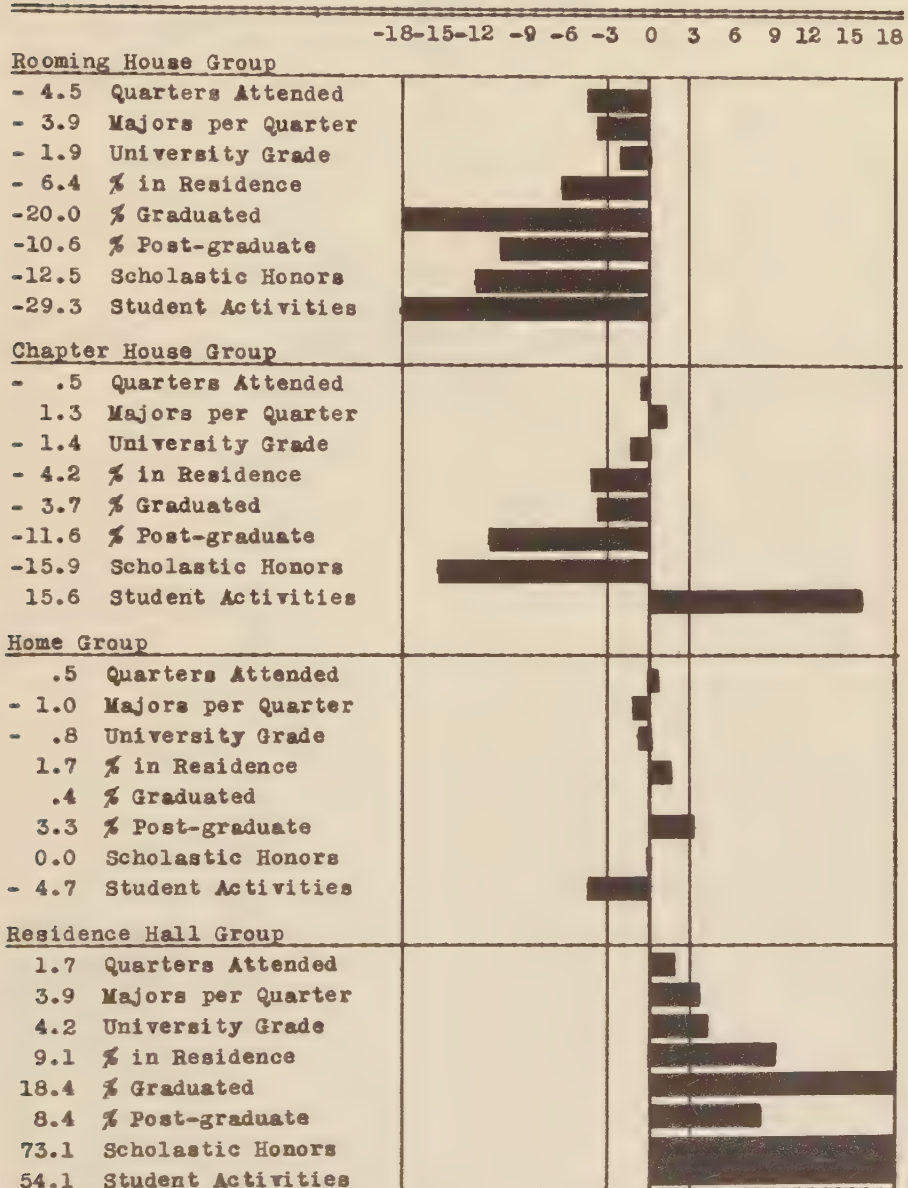
#### New Plan Students

Quarterly course marks.- The housing groups are compared in Table X on the basis of quarterly course marks for the first and second quarters. Three marks are used: "S"--satisfactory, "R"--registered for the course but the evidence is insufficient to justify giving a grade, and "U"--unsatisfactory. The data given are: the number of courses taken per student; the number of courses marked "U," "R," and "S"; and the percentage of the courses taken which were marked "S." The residence hall groups took the largest number of courses per student and had the largest proportion of their courses marked "S." The rooming house group of men ranked the lowest on the number of courses taken and on the proportion of courses marked "S." The chapter house group of men took more courses than the home group but received satisfactory marks in a smaller proportion. The rooming house group of the women took about the same number of courses as the home group but received a smaller proportion of satisfactory marks.

English qualifying examination.- The passing of the English Qualifying Examination is required of all. In some cases the examination was taken soon after matriculation, sometimes at various times during the course, and sometimes it was the last examination passed. If it was taken early it was a measure of preparation on entering the university, but if it was taken late it was largely a measure of success in the university. The data are given in Table XI for the percentage of each group who passed the examination and the average grade made by those taking the examination. Sometimes the examination was attempted a number of times before

Chart 1

Ratio of Deviation of Each Housing Group of Men from Total  
Group on Each Measure of University Success to the  
Standard Deviation of Difference of Means





## Chart 2

Ratio of Deviation of Each Housing Group of Women from Total  
Group on Each Measure of University Success to the  
Standard Deviation of Difference of Means

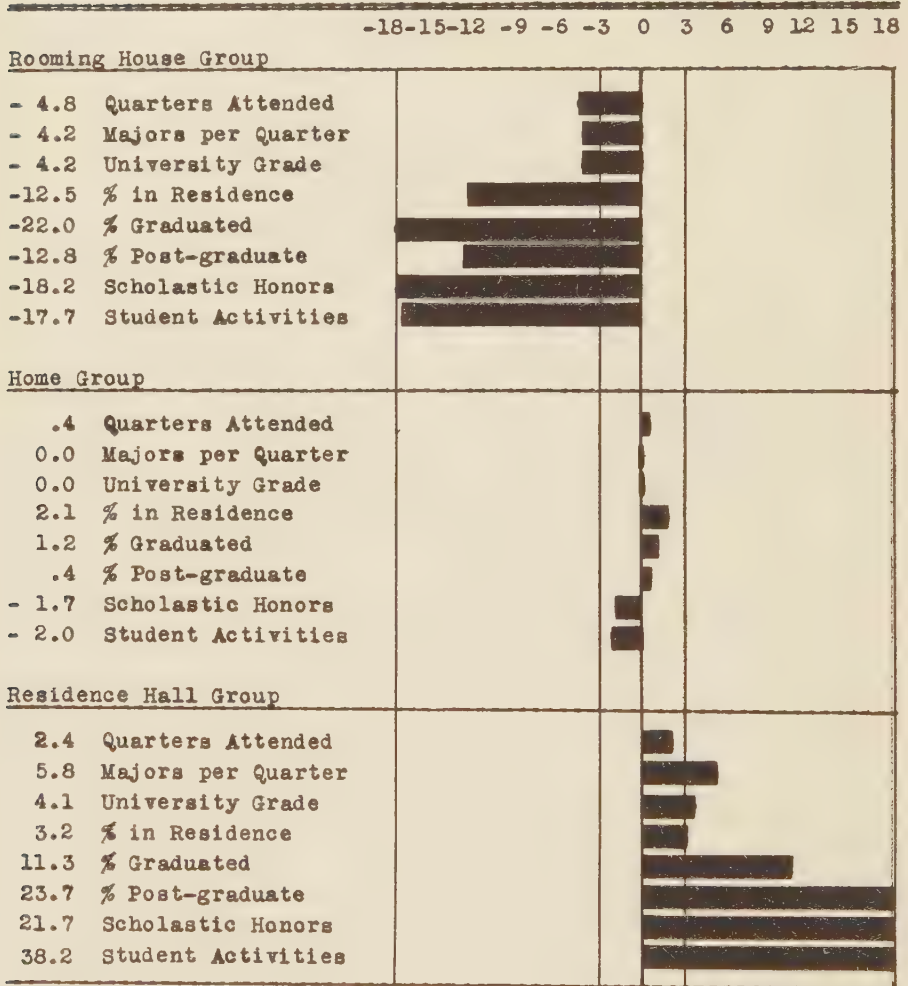


TABLE X  
COMPARISON OF HOUSING GROUPS UNDER THE NEW PLAN  
BASED UPON COURSE MARKS PER STUDENT

| Housing Groups     | Number | Total Marks per Student | Number Marked "U" | Number Marked "R" | Number Marked "S" | Percentage Marked "S" |
|--------------------|--------|-------------------------|-------------------|-------------------|-------------------|-----------------------|
| Men                |        |                         |                   |                   |                   |                       |
| Rooming House....  | 23     | 5.81                    | 1.48              | .52               | 3.91              | 67                    |
| Chapter House....  | 60     | 6.62                    | 1.53              | .46               | 4.63              | 70                    |
| Home.....          | 248    | 6.37                    | 1.09              | .38               | 4.90              | 77                    |
| Residence Hall.... | 58     | 7.15                    | .60               | .50               | 6.05              | 85                    |
| Total.....         | 443    | 6.58                    | 1.12              | .43               | 5.03              | 76                    |
| Women              |        |                         |                   |                   |                   |                       |
| Rooming House....  | 36     | 6.45                    | 1.53              | .44               | 4.48              | 69                    |
| Home.....          | 225    | 6.43                    | 1.41              | .34               | 4.68              | 73                    |
| Residence Hall.... | 45     | 7.01                    | .67               | .38               | 5.96              | 85                    |
| Total.....         | 328    | 6.53                    | 1.29              | .35               | 4.89              | 75                    |

TABLE XI  
COMPARISON OF HOUSING GROUPS BASED UPON THE  
ENGLISH QUALIFYING EXAMINATION

| Housing Groups      | Number | Percentage Passing | Average Grade |
|---------------------|--------|--------------------|---------------|
| Men                 |        |                    |               |
| Rooming House.....  | 23     | 43.5               | 1.84          |
| Chapter House.....  | 60     | 53.3               | .65           |
| Home.....           | 248    | 56.0               | 1.47          |
| Residence Hall..... | 58     | 69.0               | 3.09          |
| Women               |        |                    |               |
| Rooming House.....  | 36     | 44.4               | 2.40          |
| Home.....           | 225    | 52.9               | 1.75          |
| Residence Hall..... | 45     | 68.9               | 3.94          |

successful completion. In this case only the final grade was counted. The average grade is stated in terms of the point-major ratio. The residence hall groups were highest both in the percentage passing and in average grade made. The rooming house groups were lowest on the percentage passing but were second on the average grade made. The chapter house group of the men and the home group of the women were lowest on the average grade on the examination.

Attendance and comprehensive examinations.- The decisive measure of the success of students under the new plan is the comprehensive examination. The comparison of the housing groups based upon the average number of quarters attended, the average number of comprehensive examinations passed, the average grade made on the comprehensives, and the percentage of each group who completed the work of the college in two years is shown in Table XII.

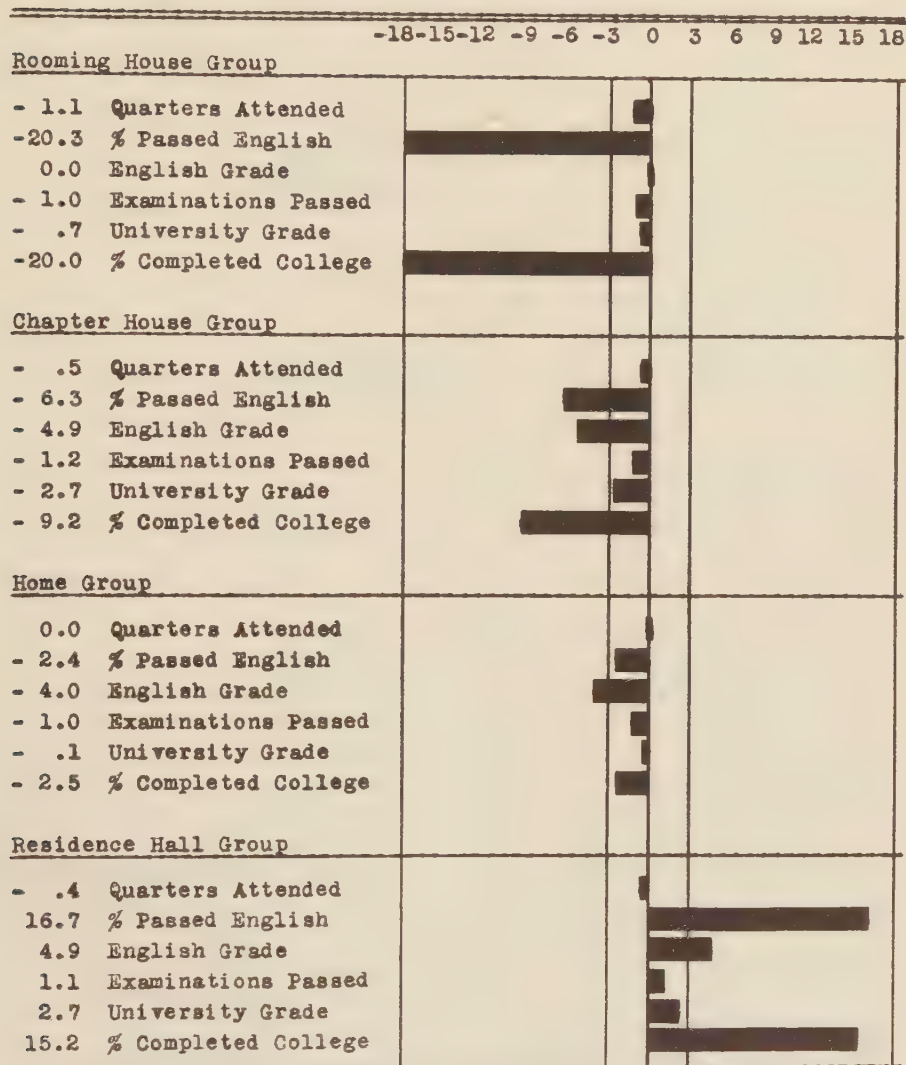
TABLE XII  
COMPARISON OF HOUSING GROUPS BASED UPON  
ATTENDANCE AND EXAMINATIONS

| Housing Groups    | Number | Average<br>Terms<br>Attended | Number<br>Examinations<br>Passed | Average<br>Grade | Percentage<br>Completed<br>College |
|-------------------|--------|------------------------------|----------------------------------|------------------|------------------------------------|
| Men               |        |                              |                                  |                  |                                    |
| Rooming House.... | 23     | 4.09                         | 3.13                             | 1.70             | 21.7                               |
| Chapter House.... | 60     | 4.53                         | 3.45                             | 1.20             | 28.3                               |
| Home.....         | 248    | 4.71                         | 3.76                             | 2.11             | 32.6                               |
| Residence Hall... | 58     | 4.57                         | 4.26                             | 2.96             | 44.8                               |
| Total.....        | 443    | 4.71                         | 3.82                             | 2.09             | 34.3                               |
| Women             |        |                              |                                  |                  |                                    |
| Rooming House.... | 36     | 4.09                         | 2.67                             | 1.49             | 16.7                               |
| Home.....         | 225    | 4.78                         | 3.39                             | 1.42             | 22.7                               |
| Residence Hall... | 45     | 4.82                         | 4.07                             | 2.29             | 37.9                               |
| Total.....        | 328    | 4.76                         | 3.46                             | 1.87             | 24.4                               |

Among the women the residence hall group ranked highest and the rooming house group lowest on the number of quarters attended, the number of examinations passed, and the percentage who completed the work of the college in two years. The rooming house group of

Chart 3

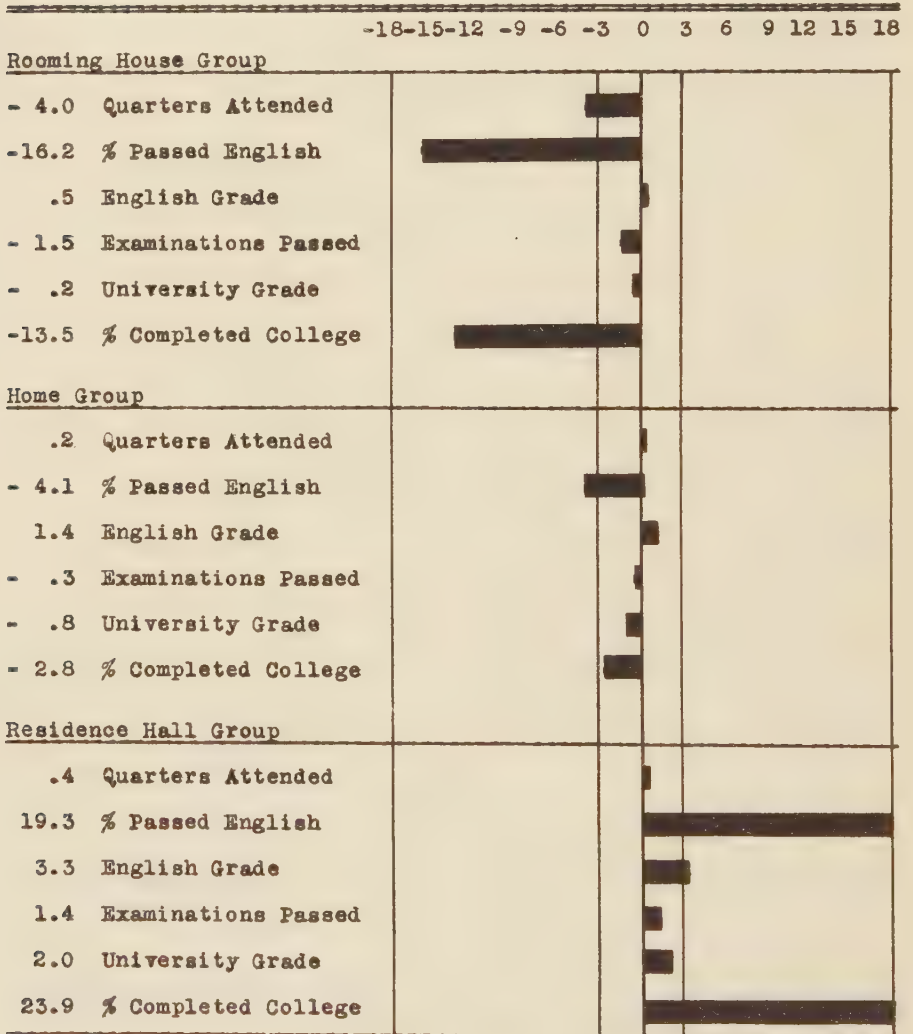
Ratio of Deviation of Each Housing Group of New Plan Men  
from Total Group on Each Measure of University Success  
to the Standard Deviation of Difference of Means





### Chart 4

Ratio of Deviation of Each Housing Group of New Plan Women  
from Total Group on Each Measure of University Success  
to the Standard Deviation of Difference of Means



the men ranked lowest of the men on each of these measures and the chapter house group next higher. The home group of the men ranked highest of the men on the number of quarters attended, but the residence hall group ranked highest on the number of examinations passed, the average grade made, and the percentage who completed the work of the college. The chapter house group made the lowest average grade.

#### Chapter Summary

Residence hall groups.- The residence hall groups of men and women attended the largest number of quarters, completed the largest number of majors per quarter, and made the highest average grades. They had the smallest proportion dismissed for poor work and who withdrew while on probation for poor work. They had the largest proportion still in residence, the largest proportion graduated, and the largest proportion enrolled for graduate work. The method of pairing showed that they were significantly above the other groups in scholastic record. They ranked first in scholastic honors and in ratings by students and faculty.

Under the new plan the residence hall groups took the largest number of courses per student and secured satisfactory marks in the largest percentage. They ranked first in the number of examinations passed and on the average grades made on the examinations and had the largest percentage who completed the work of the college.

Rooming house groups.- These groups attended the smallest number of quarters, completed the smallest number of majors per quarter, and made the lowest average grades. They had the largest percentage dismissed for poor work and who withdrew while on probation for poor work. They had the smallest percentage still in residence and the smallest who had graduated. They were lowest on student activities. The women were lowest on scholastic honors and the men third.

The rooming house groups under the new plan were lowest on course marks received, number of quarters attended, number of examinations passed, and percentage who completed the work of the college. They were next to the lowest on the grades made on the comprehensive examinations.

Home groups.- The home groups were second on the number of quarters attended, the number of majors completed per quarter, on the average grades made, and on scholastic honors. They were also second on the percentage still in residence, the percentage who had graduated, and the percentage enrolled for graduate work. The women were second and the men third on student activities.

The home groups under the new plan were second on the per-

centages receiving satisfactory course marks, the number of quarters attended, the number of examinations passed, and the percentages who completed the work of the college. The men were second and the women third on the average grade made on the comprehensive examinations.

Chapter house group.- This group ranked third on the number of quarters attended, the average grade made, the percentage still in residence, and the percentage who had graduated. They were second on the number of majors completed per quarter and on participation in student activities. They were lowest on scholastic honors received and on the percentage enrolled for graduate work.

The group under the new plan ranked third on the number of quarters attended, the number of examinations passed, and the percentage who completed the work of the college. They were lowest on the average grade made on the comprehensive examinations.

Significance of the findings.- It has been shown by the correlation ratio technique and the contingency technique that the differences among the groups were significant and could not be attributed to chance.

## CHAPTER IV

### INITIAL CHARACTERISTICS OF THE HOUSING GROUPS

The greatest weakness of most studies of the relation of student housing to college success is that the initial characteristics of the members of the groups have not been adequately considered. If differences such as those shown in Chapter III are found in the success of the housing groups, the differences may be the result of chance factors, they may be the result of differences in the ability of the students who make up the groups, or they may be the result of inherent differences in the scholastic desirability of the types of housing. In this chapter the housing groups are compared on the basis of their initial characteristics and the significance of the differences on each of the measures determined statistically.

#### High School Grades

The average of the grades made in high school is one of the principal measures used in the selection of students for the university. This justifies its use as a measure of the initial characteristics of the members of the housing groups. The proportional distribution of the students with different high school averages for each of the housing groups is shown in Table XIII, and also the means and standard deviations for each group. The means of the groups are not greatly different and the dispersion as shown by the standard deviations is similar. The residence hall groups are somewhat superior to the others, but the difference does not seem to be great. To determine the significance of the differences among the groups the correlation ratio as used in Chapter III was again used. The index of significance was 0.55, which indicates little if any selection of the groups. Apparently success in high school is not an important factor in the selection of type of housing.

#### Psychological Examination

The psychological examination is second only to the high school grades as a selective measure for university entrance. The proportional distribution of students in the housing groups on the scores on the psychological examination is given in Table XIV. The variations among the groups were small. The correlation ratio technique gave an index of significance of 0.93, which showed that the differences could be accounted for by random sampling. A dif-



TABLE XIII  
PERCENTAGE DISTRIBUTION OF HIGH SCHOOL  
GRADES OF THE HOUSING GROUPS

| High School<br>Grades | Rooming<br>House | Chapter<br>House | Home  | Residence<br>Hall | Total |
|-----------------------|------------------|------------------|-------|-------------------|-------|
| Men                   |                  |                  |       |                   |       |
| 98-99.....            | ..               | .7               | .4    | 4.5               | .6    |
| 96-97.....            | 4.6              | 3.0              | 4.5   | 4.5               | 4.1   |
| 94-95.....            | 8.5              | 8.2              | 6.6   | 9.1               | 7.6   |
| 92-93.....            | 7.9              | 8.6              | 9.6   | 13.6              | 9.3   |
| 90-91.....            | 19.0             | 19.0             | 14.3  | 13.6              | 16.2  |
| 88-89.....            | 14.5             | 16.3             | 19.6  | 22.9              | 17.7  |
| 86-87.....            | 14.5             | 16.7             | 17.6  | 15.9              | 17.0  |
| 84-85.....            | 11.9             | 13.4             | 13.7  | 9.1               | 13.2  |
| 82-83.....            | 14.5             | 10.8             | 11.6  | 4.5               | 11.7  |
| 80-81.....            | 4.6              | 3.3              | 2.1   | 2.3               | 2.6   |
| Total.....            | 152              | 269              | 774   | 44                | 1332  |
| Mean.....             | 88.58            | 88.74            | 88.70 | 90.05             | 88.77 |
| SD.....               | 4.30             | 4.06             | 4.01  | 4.18              | 4.09  |
| Women                 |                  |                  |       |                   |       |
| 98-99.....            | 1.2              | ..               | .3    | ..                | .4    |
| 96-97.....            | 5.5              | ..               | 5.0   | 10.0              | 5.6   |
| 94-95.....            | 13.3             | ..               | 10.7  | 16.4              | 11.7  |
| 92-93.....            | 13.3             | ..               | 15.4  | 11.8              | 14.8  |
| 90-91.....            | 15.8             | ..               | 16.8  | 16.3              | 16.7  |
| 88-89.....            | 15.2             | ..               | 15.1  | 14.5              | 14.9  |
| 86-87.....            | 18.8             | ..               | 13.9  | 15.5              | 14.8  |
| 84-85.....            | 8.5              | ..               | 11.7  | 7.3               | 11.0  |
| 82-83.....            | 4.9              | ..               | 8.0   | 5.5               | 7.0   |
| 80-81.....            | 3.6              | ..               | 3.1   | 2.7               | 3.1   |
| Total.....            | 165              | ..               | 684   | 110               | 1005  |
| Mean.....             | 89.91            | ..               | 89.69 | 90.44             | 89.72 |
| SD.....               | 4.20             | ..               | 4.19  | 4.27              | 4.19  |

ferent sampling might reduce the differences to zero. Yet there seemed to be a tendency for the stronger students, as indicated by this examination, to select the residence halls and chapter houses and for the weaker students to go into the rooming houses.

#### High School Personality Rating

It is frequently stated that the membership of certain housing groups is selected on the basis of personality. The rat-

TABLE XIV

PERCENTAGE DISTRIBUTION OF PSYCHOLOGICAL EXAMINATION  
SCORES OF THE HOUSING GROUPS

| Psychological<br>Examination | Rooming<br>House | Chapter<br>House | Home   | Residence<br>Hall | Total  |
|------------------------------|------------------|------------------|--------|-------------------|--------|
| Men                          |                  |                  |        |                   |        |
| 250-up.....                  | 2.4              | 3.0              | 3.0    | 7.1               | 2.8    |
| 230-249.....                 | 4.8              | 7.2              | 5.7    | 7.1               | 6.0    |
| 210-229.....                 | 4.8              | 7.2              | 5.4    | 9.5               | 5.9    |
| 190-209.....                 | 11.2             | 8.4              | 9.5    | 16.8              | 9.9    |
| 170-189.....                 | 6.4              | 8.4              | 11.8   | 2.4               | 10.3   |
| 150-169.....                 | 12.8             | 14.0             | 12.5   | 9.5               | 12.8   |
| 130-149.....                 | 12.0             | 12.2             | 12.2   | 9.5               | 12.1   |
| 110-129.....                 | 8.8              | 12.9             | 14.7   | 11.9              | 13.4   |
| 90-109.....                  | 12.0             | 11.8             | 8.2    | 9.5               | 9.6    |
| 70- 89.....                  | 9.6              | 8.4              | 9.5    | 9.5               | 9.4    |
| 50- 69.....                  | 7.2              | 5.0              | 4.8    | 4.8               | 4.8    |
| ..- 49.....                  | 8.0              | 1.5              | 2.7    | 2.4               | 3.0    |
| Total.....                   | 125              | 263              | 736    | 42                | 1260   |
| Mean.....                    | 137.28           | 150.04           | 148.15 | 158.10            | 147.95 |
| SD.....                      | 59.29            | 54.98            | 54.51  | 61.54             | 55.36  |
| Women                        |                  |                  |        |                   |        |
| 250-up.....                  | ..               | ..               | 1.8    | 1.9               | 1.5    |
| 230-249.....                 | 2.2              | ..               | 2.3    | 2.8               | 2.5    |
| 210-229.....                 | 5.9              | ..               | 4.9    | 9.3               | 5.4    |
| 190-209.....                 | 2.2              | ..               | 6.3    | 9.3               | 6.3    |
| 170-189.....                 | 13.2             | ..               | 10.0   | 12.2              | 11.3   |
| 150-169.....                 | 11.0             | ..               | 13.8   | 17.8              | 13.4   |
| 130-149.....                 | 14.0             | ..               | 11.6   | 16.9              | 12.4   |
| 110-129.....                 | 14.7             | ..               | 15.4   | 14.0              | 15.3   |
| 90-109.....                  | 11.8             | ..               | 11.8   | 8.4               | 11.5   |
| 70- 89.....                  | 11.0             | ..               | 10.6   | 5.6               | 10.0   |
| 50- 69.....                  | 9.6              | ..               | 7.4    | .9                | 6.8    |
| ..- 49.....                  | 4.4              | ..               | 4.1    | .9                | 3.6    |
| Total.....                   | 136              | ..               | 652    | 107               | 934    |
| Mean.....                    | 129.41           | ..               | 134.79 | 155.34            | 136.98 |
| SD.....                      | 50.17            | ..               | 52.34  | 45.39             | 51.61  |

ing of the students by those acquainted with them in high school is one measure of this factor. The distribution of these ratings is given in Table XV. The rooming house and home groups of men had lower ratings than the others and somewhat higher standard deviations. The correlation ratio procedure gave an index of sig-

TABLE XV  
PERCENTAGE DISTRIBUTION OF PERSONALITY  
RATINGS OF THE HOUSING GROUPS

| Personality Rating | Rooming House | Chapter House | Home | Residence Hall | Total |
|--------------------|---------------|---------------|------|----------------|-------|
| Men                |               |               |      |                |       |
| 90-99.....         | 6.3           | 9.4           | 3.8  | 6.2            | 5.4   |
| 80-89.....         | 15.8          | 26.0          | 23.6 | 31.3           | 23.9  |
| 70-79.....         | 30.5          | 32.8          | 31.0 | 43.8           | 32.0  |
| 60-69.....         | 24.2          | 21.4          | 26.1 | 9.4            | 24.4  |
| 50-59.....         | 15.6          | 7.8           | 11.4 | 6.2            | 10.4  |
| 40-49.....         | 6.3           | 2.6           | 3.5  | 3.1            | 3.4   |
| 30-39.....         | 1.5           | ..            | .6   | ..             | .5    |
| Total.....         | 95            | 192           | 630  | 32             | 1025  |
| Mean.....          | 70.0          | 75.0          | 71.9 | 76.3           | 72.7  |
| SD.....            | 13.3          | 11.8          | 12.0 | 10.8           | 12.0  |
| Women              |               |               |      |                |       |
| 90-99.....         | 7.8           | ..            | 5.5  | 8.0            | 6.4   |
| 80-89.....         | 25.2          | ..            | 21.8 | 27.6           | 23.2  |
| 70-79.....         | 28.8          | ..            | 31.4 | 29.9           | 30.0  |
| 60-69.....         | 25.2          | ..            | 25.6 | 24.2           | 25.6  |
| 50-59.....         | 10.4          | ..            | 12.9 | 5.7            | 11.8  |
| 40-49.....         | .9            | ..            | 2.5  | 3.5            | 2.4   |
| 30-39.....         | 1.7           | ..            | .3   | 1.1            | .6    |
| Total.....         | 115           | ..            | 564  | 87             | 801   |
| Mean.....          | 73.3          | ..            | 72.6 | 74.3           | 72.7  |
| SD.....            | 12.4          | ..            | 11.9 | 12.5           | 12.1  |

nificance of 6.06, which showed that there was a positive relation between the ratings and the composition of the housing groups.

#### Personality Schedule

The personality schedule scores were available for only the class that entered in the fall of 1929. The data are given in Table XVI. The lower the score the better the student is adjusted. The home and chapter house groups were the best adjusted and the residence hall groups the least well adjusted. The correlation ratio technique gave an index of significance of 0.77, which indicated that there was no selection of students for the different types of housing as far as measured by the personality schedule.

TABLE XVI  
PERCENTAGE DISTRIBUTION OF PERSONALITY SCHEDULE  
SCORES OF THE HOUSING GROUPS

| Personality<br>Schedule | Rooming<br>House | Chapter<br>House | Home | Residence<br>Hall | Total |
|-------------------------|------------------|------------------|------|-------------------|-------|
| Men                     |                  |                  |      |                   |       |
| 0- 7.....               | 3.1              | 4.2              | 7.8  | ..                | 6.0   |
| 8-15.....               | 6.3              | 16.7             | 18.8 | 11.1              | 16.3  |
| 16-23.....              | 21.8             | 15.3             | 12.8 | 22.2              | 14.8  |
| 24-31.....              | 6.3              | 13.9             | 16.5 | 11.1              | 16.0  |
| 32-39.....              | 18.8             | 26.3             | 13.6 | 22.2              | 18.2  |
| 40-47.....              | 6.3              | 8.3              | 11.0 | ..                | 9.2   |
| 48-55.....              | 18.7             | 5.5              | 7.8  | 11.2              | 8.6   |
| 56-63.....              | 3.1              | 2.8              | 1.9  | ..                | 2.6   |
| 64-71.....              | 9.4              | 1.4              | 2.3  | ..                | 2.6   |
| 72-79.....              | ..               | 1.4              | 1.9  | 22.2              | 2.0   |
| 80-87.....              | 3.1              | 2.8              | 1.8  | ..                | 2.0   |
| 88-.....                | 3.1              | 1.4              | 1.8  | ..                | 1.7   |
| Total.....              | 32               | 72               | 218  | 9                 | 350   |
| Mean.....               | 39.5             | 31.4             | 30.4 | 39.1              | 31.7  |
| Well Adjusted           | 35%              | 44%              | 52%  | 33%               | 41%   |
| Women                   |                  |                  |      |                   |       |
| 0- 7.....               | 4.9              | ..               | 3.7  | 5.9               | 4.0   |
| 8-15.....               | 7.3              | ..               | 9.5  | 8.8               | 9.1   |
| 16-23.....              | 9.7              | ..               | 16.8 | 8.8               | 14.3  |
| 24-31.....              | 14.6             | ..               | 13.2 | 5.9               | 12.4  |
| 32-39.....              | 4.9              | ..               | 15.3 | 2.9               | 12.4  |
| 40-47.....              | 19.6             | ..               | 9.5  | 8.8               | 10.6  |
| 48-55.....              | 9.7              | ..               | 14.7 | 20.7              | 14.3  |
| 56-63.....              | 19.6             | ..               | 4.7  | 14.7              | 8.0   |
| 64-71.....              | ..               | ..               | 7.9  | 8.8               | 7.3   |
| 72-79.....              | 7.3              | ..               | 2.6  | 5.9               | 4.0   |
| 80-87.....              | ..               | ..               | .5   | ..                | .7    |
| 88-.....                | 2.4              | ..               | 1.6  | 8.8               | 2.9   |
| Total.....              | 41               | ..               | 190  | 34                | 274   |
| Mean.....               | 42.1             | ..               | 38.3 | 48.3              | 40.7  |
| Well Adjusted           | 20%              | ..               | 36%  | 21%               | 24%   |

#### Age of University Entrance

It has usually been found that the younger students do better work than the older ones, though the difference is not great. In other words, the correlation between age and college success has been found to be negative but low. The age of entrance



of the housing groups is shown in Table XVII. The most marked apparent differences are that the rooming house groups were older than the others of the same sex, the men by more than a year and the women nearly a half year. The men in the residence hall group were somewhat older than those of the home and chapter house groups. The correlation ratio technique gave an index of significance of 18.6, positive evidence that the variations were not the result of chance.

TABLE XVII  
PERCENTAGE DISTRIBUTION OF AGE OF UNIVERSITY  
ENTRANCE OF THE HOUSING GROUPS

| Age of Entrance | Rooming House | Chapter House | Home | Residence Hall | Total |
|-----------------|---------------|---------------|------|----------------|-------|
| Men             |               |               |      |                |       |
| 16 and under... | .6            | 4.7           | 7.0  | 2.1            | 6.1   |
| 17 .....        | 11.6          | 24.7          | 28.4 | 23.4           | 25.9  |
| 18 .....        | 35.5          | 39.8          | 37.0 | 47.0           | 37.7  |
| 19 .....        | 22.0          | 15.8          | 15.3 | 10.6           | 15.8  |
| 20 .....        | 7.8           | 8.9           | 5.9  | 6.4            | 6.4   |
| 21 .....        | 7.1           | 2.5           | 2.2  | 2.1            | 2.7   |
| 22 .....        | 6.4           | 3.2           | 1.2  | 4.2            | 2.2   |
| 23 .....        | 4.5           | .4            | .8   | 2.1            | 1.1   |
| 24 and over.... | 4.5           | ..            | 2.2  | 2.1            | 2.1   |
| Total.....      | 155           | 279           | 882  | 47             | 1466  |
| Mean.....       | 19.8          | 18.7          | 18.7 | 19.0           | 18.8  |
| Women           |               |               |      |                |       |
| 16 and under... | 4.7           | ..            | 6.5  | 2.6            | 5.9   |
| 17 .....        | 24.4          | ..            | 36.2 | 29.2           | 33.9  |
| 18 .....        | 36.8          | ..            | 36.0 | 47.8           | 37.0  |
| 19 .....        | 10.1          | ..            | 12.5 | 14.2           | 12.6  |
| 20 .....        | 7.8           | ..            | 3.1  | 3.5            | 3.8   |
| 21 .....        | 4.2           | ..            | 1.2  | 1.8            | 1.6   |
| 22 .....        | 4.8           | ..            | 1.0  | ..             | 1.5   |
| 23 .....        | 1.8           | ..            | .9   | ..             | .9    |
| 24 .....        | 5.4           | ..            | 2.6  | .9             | 2.8   |
| Total.....      | 168           | ..            | 774  | 113            | 1101  |
| Mean.....       | 19.0          | ..            | 18.5 | 18.5           | 18.6  |

#### Education of Parents

The education of the parents is largely a measure of socioeconomic status. The available data gave only four gradations of education: college graduate, attended college, high school gradu-

ate, or not high school graduate. The education of the fathers and the education of the mothers were given separately. Over one-fifth of the fathers were college graduates and nearly one-half had less education than high school graduation. About the same proportion of the mothers were not high school graduates but only about one-third as many were college graduates. The housing groups were compared on the education of the fathers and the education of the mothers separately but the same tendencies were found in both so the two were combined. In 129 cases both the parents were college graduates, but at the other extreme there were 906 cases where neither parent was a high school graduate. The detailed classification of the combined education of the parents was grouped into five divisions. The proportional distribution of the housing groups in these divisions is shown in Table XVIII. The parents of

TABLE XVIII

COMPARISON OF THE HOUSING GROUPS BASED UPON PERCENTAGE  
DISTRIBUTION OF EDUCATION OF THE PARENTS

| Education of Parents                                                             | Rooming<br>House | Chapter<br>House | Home  | Resi-<br>dence<br>Hall | Total |
|----------------------------------------------------------------------------------|------------------|------------------|-------|------------------------|-------|
| Men                                                                              |                  |                  |       |                        |       |
| Both College Graduates or one<br>a Graduate and other Attend-<br>ed College..... | 11.0%            | 13.4%            | 9.4%  | 18.2%                  | 11.2% |
| Both Attended College or one<br>Attended and other High<br>School Graduate.....  | 18.0             | 18.9             | 13.4  | 22.8                   | 15.3  |
| One College Trained and other<br>Not High School Graduate....                    | 6.2              | 9.5              | 6.9   | 6.8                    | 7.6   |
| Both High School Graduates or<br>one High School Graduate and<br>other Not.....  | 22.8             | 24.8             | 26.4  | 13.6                   | 24.7  |
| Neither a High School Graduate                                                   | 42.0             | 33.4             | 43.9  | 38.6                   | 41.2  |
| Women                                                                            |                  |                  |       |                        |       |
| Both College Graduates or one<br>a Graduate and other Attend-<br>ed College..... | 10.3             | ..               | 9.9   | 17.6                   | 10.9  |
| Both Attended College or one<br>Attended and other High<br>School Graduate.....  | 12.3             | ..               | 19.8  | 21.3                   | 19.1  |
| One College Trained and other<br>Not High School Graduate....                    | 5.2              | ..               | 9.4   | 10.2                   | 8.7   |
| Both High School Graduates or<br>one High School Graduate and<br>other Not.....  | 24.5             | ..               | 28.6  | 27.8                   | 27.6  |
| Neither a High School Graduate                                                   | 47.7%            | ..               | 32.3% | 23.1%                  | 33.7% |

the members of the residence hall groups had more extended education than the others and the chapter house students were second. Since there were no quantitative differences in the different categories the contingency technique was employed to determine whether the differences among the groups were the result of selection. The index of significance was 8.1. This showed that the socio-economic status of the students as measured by the education of the parents was a factor in the determination of the personnel of the housing groups. If the housing groups had been formed by chance grouping there would have been a different distribution of the students.

#### Occupations of the Fathers

The occupation of the father is a commonly used measure of the socio-economic status of the family. The data for this study were collected in ten divisions as given in the Appendix but because of the small numbers in them the clerical, agricultural, transportation, public service, and miscellaneous were combined into one. This gave six classes: professional, commercial, proprietors, managerial, skilled trades, and all others. The proportional distribution is given in Table XIX. The residence hall group of the men had above the average from the professional class

TABLE XIX  
PERCENTAGE DISTRIBUTION OF HOUSING GROUPS  
BASED UPON OCCUPATION OF FATHERS

| Housing Groups | Number | Professional | Commercial | Proprietors | Managerial | Skilled Trades | Others |
|----------------|--------|--------------|------------|-------------|------------|----------------|--------|
| Men            |        |              |            |             |            |                |        |
| Rooming...     | 140    | 21.4         | 15.7       | 21.4        | 8.0        | 12.1           | 21.4   |
| Chapter...     | 268    | 25.0         | 15.3       | 23.5        | 12.7       | 10.4           | 13.1   |
| Home.....      | 815    | 17.8         | 18.0       | 20.4        | 12.3       | 20.5           | 11.0   |
| Hall.....      | 44     | 31.8         | 18.2       | 20.4        | 11.4       | 4.5            | 13.7   |
| Total.         | 1364   | 20.2         | 16.8       | 21.7        | 11.3       | 16.8           | 12.2   |
| Women          |        |              |            |             |            |                |        |
| Rooming...     | 159    | 16.4         | 13.2       | 22.0        | 12.0       | 13.8           | 22.6   |
| Home.....      | 720    | 22.8         | 17.8       | 18.9        | 13.4       | 16.1           | 11.0   |
| Hall.....      | 103    | 23.3         | 17.5       | 19.4        | 17.5       | 11.6           | 10.7   |
| Total.         | 1026   | 22.2         | 16.5       | 19.2        | 13.7       | 15.6           | 12.8   |

and below the average from the skilled trades. The chapter house group had above the average from the professional and proprietors classes and below the average from the skilled trades. The room-

ing house groups had above the average from the miscellaneous class. The contingency technique gave an index of significance of 8.7. The socio-economic status of the students as measured by the occupation of the fathers was a positive factor in the formation of the housing groups.

Significance of measures of characteristics.- It is evident from the data of this chapter that the housing groups varied on the different measures of the characteristics of the student body. To determine the significance of the differences two methods have been used. The correlation ratio technique has been used with the high school grades, the psychological examination scores, the high school personality rating, the personality schedule, and the age of entrance to the university, and the contingency method has been applied to the education of the parents and the occupation of the fathers. The indexes of significance for the variations of the groups on high school grades, psychological examination scores, and personality schedule scores were 0.55, 0.93, and 0.77 respectively. These indexes indicate little if any selection of the groups on the factors measured. The indexes of significance for the high school personality rating, the age of entrance to the university, the education of the parents, and the occupation of the fathers were 6.1, 18.6, 8.1, and 8.7 respectively. These show that there were differences in the Housing groups on these factors which could not be explained by chance selection. These differences were largely differences in socio-economic status.

Graphic representation.- The comparisons made in this chapter are shown graphically in Charts 5 and 6. In these charts the deviation of each group from the mean of the total is shown in the ratio of the actual deviation to the standard deviation of the difference of the means.

#### Initial Characteristics of New Plan Students

High school data.- The data on high school average grade, rank in high school class, percentage who were in the upper ten in the high school class, the percentage who were either valedictorians or salutatorians of their high school classes, and the percentage who held some kind of university scholarships are given in Table XX. The rooming house groups were highest on high school average grade and the percentage from the first ten of the high school classes and the residence hall groups second. The rooming house and residence hall groups were high on the percentages winning high school honors, while the chapter house group was low. The chapter house group had the highest percentage who held some kind of university scholarship.

Size of high school.- The distribution of students in the



### Chart 5

Ratio of Deviation of Each Housing Group of Men from Total Group on Each Measure of Initial Characteristics to the Standard Deviation of the Difference of Means

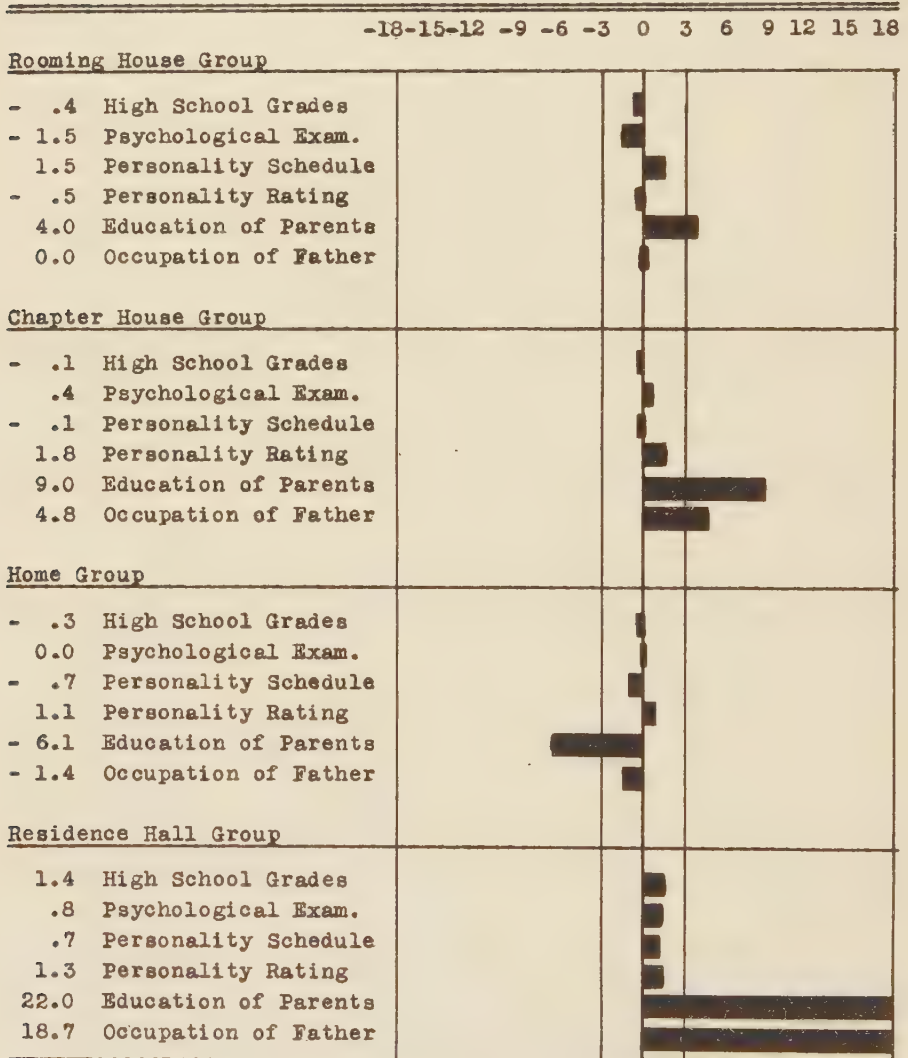


Chart 6

Ratio of Deviation of Each Housing Group of Women from Total Group on Each Measure of Initial Characteristics to the Standard Deviation of the Difference of the Means

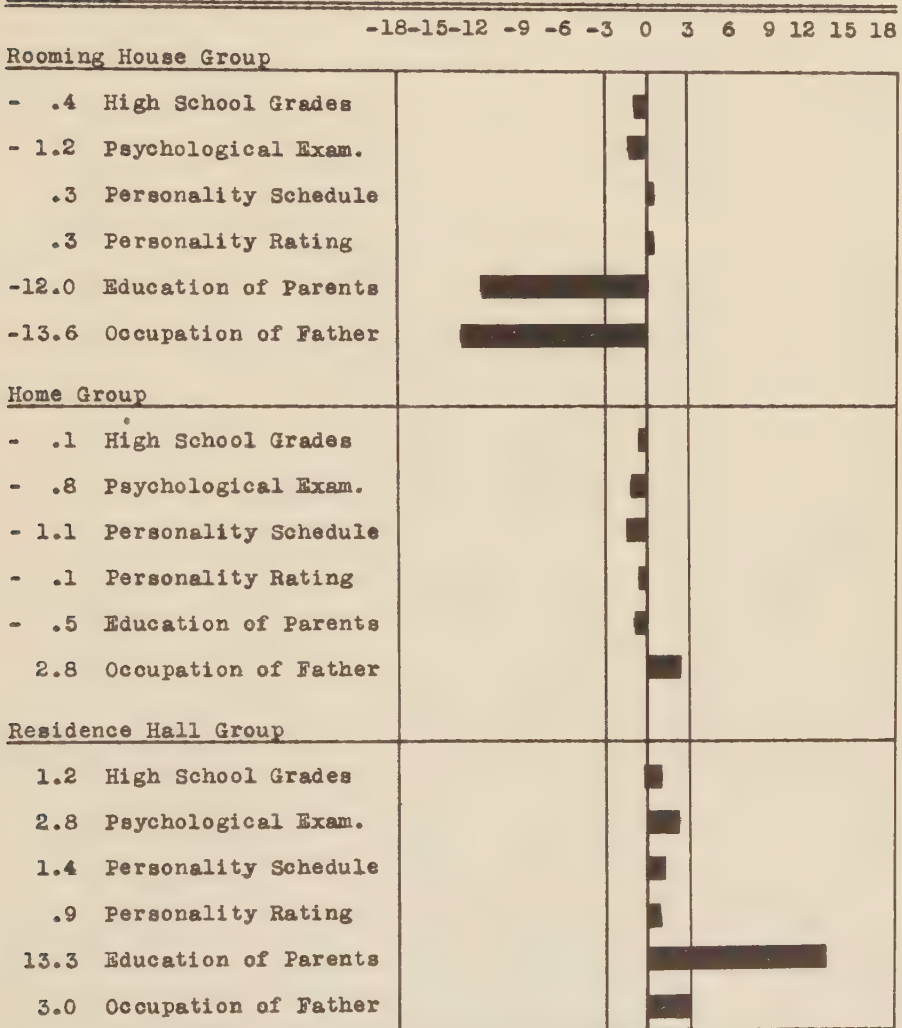


TABLE XX

HIGH SCHOOL SCHOLARSHIP OF HOUSING GROUPS, NEW PLAN

| Housing Groups | Number | High School Grades | High School Rank | Percentage in First Ten | Percentage Winning Highest High School Honors | Percentage Holding University Scholarships |
|----------------|--------|--------------------|------------------|-------------------------|-----------------------------------------------|--------------------------------------------|
| Men            |        |                    |                  |                         |                                               |                                            |
| Rooming House. | 23     | 92.0               | 81.8             | 36.4                    | 26.0                                          | 25.9                                       |
| Chapter House. | 60     | 88.3               | 77.7             | 18.6                    | 3.3                                           | 31.0                                       |
| Home.....      | 248    | 90.0               | 77.4             | 13.0                    | 8.5                                           | 12.8                                       |
| Residence Hall | 58     | 91.2               | 85.2             | 25.0                    | 22.4                                          | 30.0                                       |
| Total.....     | 443    | 90.2               | 79.2             | 15.8                    | 12.4                                          | 21.4                                       |
| Women          |        |                    |                  |                         |                                               |                                            |
| Rooming House. | 36     | 91.5               | 80.5             | 18.2                    | 16.7                                          | 16.7                                       |
| Home.....      | 225    | 89.8               | 76.9             | 14.7                    | 9.8                                           | 8.5                                        |
| Residence Hall | 45     | 91.0               | 80.3             | 16.6                    | 20.0                                          | 20.0                                       |
| Total.....     | 328    | 90.2               | 78.3             | 15.9                    | 12.5                                          | 12.2                                       |

different sizes of high schools varies widely among the housing groups. The data on this are given in Table XXI. Twenty-seven per cent of the rooming house group of men came from very small high schools and twenty-three per cent from small ones and only four per cent from the very large schools. Sixty-five per cent of the home group of men came from very large high schools. This is explained by the fact that most of the high schools of over 3,000 from which students come to the University of Chicago are located in Chicago, and that the majority of students whose homes are in Chicago reside at home. Less than half as large a percentage of the chapter house group came from the very large schools. The residence hall group had but sixteen per cent from the very large schools and about two-thirds from the schools between 500 and 2,999. Among the groups of women the most noticeable differences were that over thirty per cent of the rooming house group came from high schools of less than 500 and nearly fifty-eight per cent of the home group came from the schools of over 3,000. The mean size of the high schools was found by considering the schools as evenly distributed in each category and arbitrarily assuming 4,000 as the mean of the very large schools.

Kind of high school, age, psychological examination.- The data on the kind of high school the new plan students were from, the age of entrance, and the psychological examination scores are given in Table XXII. A larger percentage of the chapter house

TABLE XXI

SIZE OF HIGH SCHOOL FROM WHICH STUDENTS CAME

| Housing Groups   | Number | 000-<br>199 | 200-<br>499 | 500-<br>999 | 1000-<br>2999 | 3000-<br>Up | Mean<br>Size |
|------------------|--------|-------------|-------------|-------------|---------------|-------------|--------------|
| Men              |        |             |             |             |               |             |              |
| Rooming House... | 22     | 27.3%       | 22.8%       | 27.3%       | 18.2%         | 4.4%        | 950          |
| Chapter House... | 59     | 5.1         | 15.2        | 18.7        | 33.9          | 27.1        | 2130         |
| Home.....        | 241    | 5.4         | 5.4         | 13.7        | 10.4          | 65.1        | 2990         |
| Residence Hall.. | 55     | 9.1         | 7.3         | 29.1        | 38.2          | 16.3        | 1860         |
| Total.....       | 428    | 7.5         | 9.6         | 17.5        | 19.8          | 45.6        | 2490         |
| Women            |        |             |             |             |               |             |              |
| Rooming House... | 33     | 15.2        | 15.2        | 18.2        | 30.2          | 21.2        | 1810         |
| Home.....        | 220    | 8.6         | 1.8         | 21.4        | 10.4          | 57.8        | 2750         |
| Residence Hall.. | 38     | 7.8         | 15.8        | 18.4        | 26.4          | 31.6        | 2120         |
| Total.....       | 312    | 9.3         | 5.4         | 19.5        | 15.4          | 50.4        | 2570         |

TABLE XXII

KIND OF HIGH SCHOOL, AGE OF ENTRANCE, AND  
PSYCHOLOGICAL EXAMINATION SCORE

| Housing Groups    | Number | Percentage<br>from Public<br>High Schools | Age of<br>Entrance | Psychological<br>Examination<br>Score |
|-------------------|--------|-------------------------------------------|--------------------|---------------------------------------|
| Men               |        |                                           |                    |                                       |
| Rooming House.... | 23     | 78.3                                      | 20.4               | 191                                   |
| Chapter House.... | 60     | 91.6                                      | 19.5               | 185                                   |
| Home.....         | 248    | 78.6                                      | 19.3               | 204                                   |
| Residence Hall... | 58     | 84.5                                      | 19.2               | 238                                   |
| Total.....        | 443    | 80.8                                      | 19.3               | 207                                   |
| Women             |        |                                           |                    |                                       |
| Rooming House.... | 36     | 88.9                                      | 20.1               | 190                                   |
| Home.....         | 225    | 75.7                                      | 19.2               | 188                                   |
| Residence Hall... | 45     | 84.5                                      | 18.8               | 215                                   |
| Total.....        | 328    | 80.0                                      | 19.2               | 192                                   |

group than of any other group came from the public high schools. The residence hall group of men were second. The rooming house group led the women in the percentage from the public high schools



with the residence hall group second. The rooming house groups of both men and women were the oldest and the residence hall groups youngest. The residence hall groups were highest on the psychological examination score, with the chapter house group lowest of the men and the home group lowest of the women.

Personality schedule.- The information on personality schedule is given in Table XXIII under the headings: "A," extremely well adjusted; "B," well adjusted; "C," average; "D," emotionally maladjusted; "F," need psychiatric adjustment; and "Point Value" from the use of the same numerical values used for scholastic grades. The residence hall group of men had the smallest percentage extremely well adjusted and the largest percentage poorly adjusted. The point values show that the ranking of the men in adjustment was home, rooming house, chapter house, and residence hall; with the residence hall group markedly below. The ranking of the women was residence hall, home, and rooming house; with the rooming house markedly below the others.

TABLE XXIII  
PERSONALITY SCHEDULE RATINGS OF HOUSING GROUPS

| Housing Group      | Number | F    | D     | C     | B     | A     | Point Value |
|--------------------|--------|------|-------|-------|-------|-------|-------------|
| Men                |        |      |       |       |       |       |             |
| Rooming House....  | 20     | 5.0% | 15.0% | 25.0% | 40.0% | 15.0% | 2.90        |
| Chapter House....  | 57     | 3.5  | 10.5  | 42.2  | 28.1  | 15.7  | 2.84        |
| Home.....          | 216    | 1.8  | 12.0  | 40.6  | 30.3  | 15.3  | 2.91        |
| Residence Hall.... | 56     | 1.8  | 25.0  | 39.4  | 30.2  | 3.6   | 2.18        |
| Total.....         | 397    | 3.2  | 13.1  | 40.7  | 29.7  | 13.3  | 2.74        |
| Women              |        |      |       |       |       |       |             |
| Rooming House....  | 28     | 3.6  | 17.8  | 57.2  | 14.3  | 7.1   | 2.07        |
| Home.....          | 191    | 5.2  | 11.0  | 43.0  | 27.2  | 13.6  | 2.66        |
| Residence Hall.... | 41     | 2.4  | 7.3   | 51.3  | 29.3  | 9.7   | 2.74        |
| Total.....         | 279    | 5.0  | 12.3  | 45.2  | 26.1  | 11.4  | 2.53        |

#### Chapter Summary

Residence hall.- The residence hall groups of men and women ranked highest among the groups on the high school average grade, the score on the psychological examination, the high school personality rating, and the amount of education of parents. They were younger than the others and had high personality schedule scores. A large percentage of them came from the professional and directive occupations and a small percentage from the wage earning

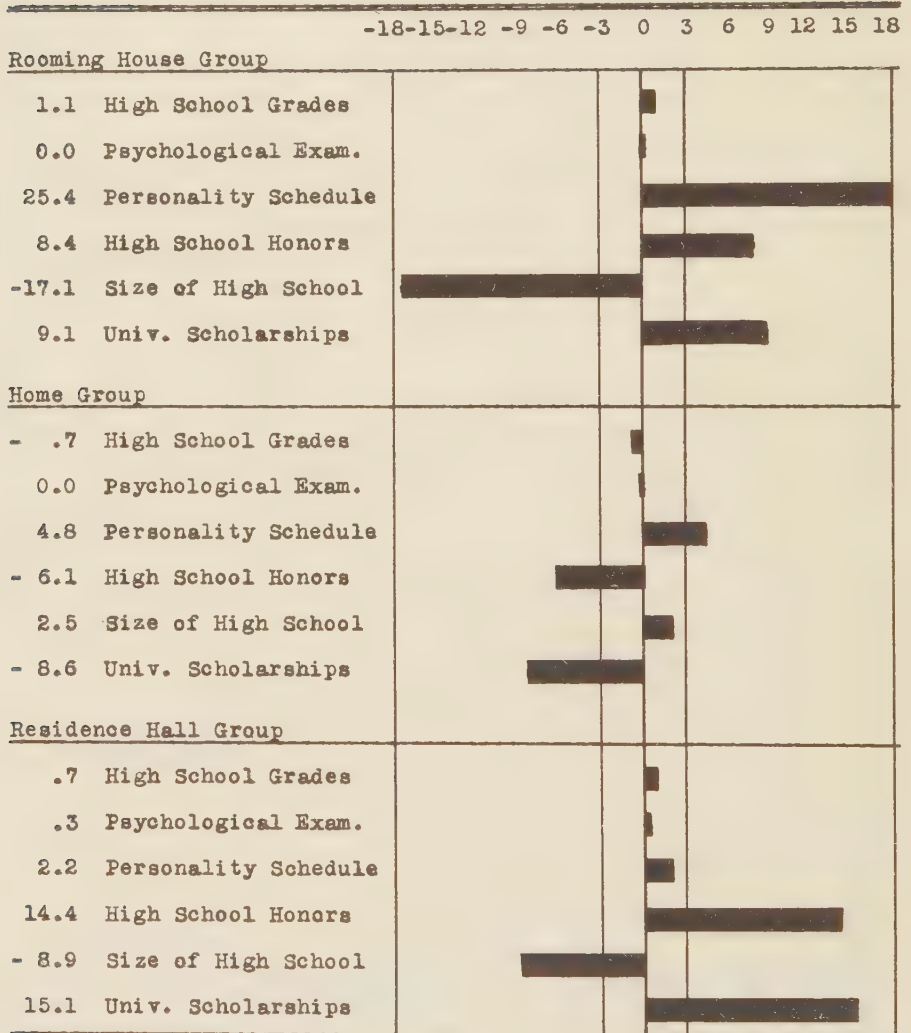
### Chart 7

Ratio of Deviation of Each Housing Group of New Plan Men from  
Total Group on Each Measure of Initial Characteristics to  
the Standard Deviation of Difference of the Means

[illegible]

### Chart 8

Ratio of Deviation of Each Housing Group of New Plan Women  
From Total on Each Measure of Initial Characteristics  
to Standard Deviation of Difference of the Means



groups.

The residence hall groups of new plan students were second on high school grades. The men were second on high school honors and on the percentage holding university scholarships, but the women were first. They came from moderately large high schools and were younger than the average. Their scores on the psychological examination were definitely above the average. The men were poorly adjusted emotionally but the women were well adjusted.

Chapter house.- The chapter house group ranked second to the residence hall group on the psychological score, the high school personality rating, the amount of education of parents, and the percentage from the professional and directive classes. They approximated the mean of the whole group on the high school average grade, age of students, and personality schedule score.

The new plan chapter house students were low on both high school average and rank. They ranked very low on the percentage who received high school scholastic honors, but were the highest on the holding of university scholarships. They came from moderately large high schools and were somewhat above the average in age. Over ninety per cent of them came from the public high schools. They were the lowest of the men on the psychological examination score and were comparatively well adjusted emotionally.

Rooming house.- The rooming house groups were low on high school average grades, psychological examination scores, and high school personality rating. The men were a year and the women a half year older than the average. Their parents had less than average education and a smaller percentage were from the professional and directive classes.

The new plan groups were first on high school grades. The men were first in the percentage receiving high school honors and the women second. About three times the average came from the small and very small high schools. They were about a year older than the average.

Home.- The home groups approximated the average of the whole number in most things. They were the best adjusted emotionally. The men were the lowest on the education of their parents. They had the smallest percentage from the professional and directive occupations.

The new plan students approximated the average in high school grades, psychological examination scores, and age. They were low on percentages receiving high school honors and percentages holding university scholarships, but nearly two-thirds of them came from the very large city high schools where the chances for honors were small.



## CHAPTER V

### COMPARISON OF UNIVERSITY GRADES AND PREDICTED GRADES OF HOUSING GROUPS

The housing groups have been compared on the basis of the measures of university success, as shown in Chapter III, and on the basis of initial characteristics, as shown in Chapter IV. The correlation ratio and contingency methods of determining the significance of the data have shown that the variations among the groups on the measures of success were greater than could have resulted from chance. The variations among the groups on some of the measures of initial characteristics were no greater than might have resulted from chance selection of the groups and on some they were greater than could be so accounted for. It has been shown in Charts 1 to 4 that the deviations of the housing groups on the measures of success from the mean of the total were significant. The deviations were not all significant for all the groups, but the deviation on each measure was significant for one or more groups. It has been shown in Charts 5 to 8 that the deviations on high school grades and psychological examination had low significance, but that the other measures of initial characteristics showed significant deviations.

The conclusion could be made that since the housing groups showed no significant differences on the two most widely used measures of initial quality, high school grades and psychological examination scores, and that they did show significant differences on the measures of university success, there must be a relation between student housing and university success. However, in general, the housing groups that deviated positively on the measures of university success deviated positively on the measures of initial characteristics and vice versa. Therefore, to determine the relation of student housing to university success it is necessary to compare the success attained by the housing groups with the initial characteristics of the groups.

It is not possible to combine either the measures of university success or the measures of initial characteristics into a single measure with any certainty of validity, but the variations from the means in terms of standard deviations are abstract numbers and can be combined. The arithmetic mean of these measures gives equal weight to each of the measures thus combined. This probably is not the correct weighting but the results are at least

suggestive. The means of the variations on the measures of initial characteristics, as shown in Charts 5 and 6, were subtracted from the means of the variations on the measures of university success, as shown in Charts 1 and 2. This procedure gave a measure of the university success of each group in terms of its initial characteristics. If the difference between the mean of the deviations on the measures of success and the mean of the deviations on the measures of initial characteristics was positive it indicated that the housing group exceeded the expectations based upon initial characteristics. If the difference was negative it indicated that the housing group failed to equal expectations. For the men the differences were: rooming house, -11.8; chapter house, -5.2; home, -1.2; and residence hall, 14.1. For the women the differences were: rooming house, -7.6; home, 0.1; and residence hall, 10.0. Since these are ratios any that are above 3.0 are significant. The home groups approximately equaled the promise of their initial characteristics. The rooming house and chapter house groups were significantly below expectations and the residence hall groups significantly above expectations.

The uncertainty of the correctness of the equal weighting of the different factors shows the need for a more specific treatment. It seemed advisable to select the measure which is the most widely applicable and use it as representative of the measures of success. The average university grade, defined as the point-major ratio, seemed the most representative of the available measures. The proportion of students still in residence, the proportion who had graduated, and the proportion enrolled for graduate work are measures which each include only part of the student body. The same is true for the proportion winning scholastic honors and the extent of participation in student activities. This does not impair the validity of these measures, but it does make each of them less representative than the university grade as a single measure of success. A second reason for the selection of university grade as a representative measure of university success is that it more nearly measures the mental ability and effort of the students than do the other measures. The number of quarters attended might depend upon the financial backing of the student rather than upon the student himself, and the same might be true to some extent for the proportion still in residence, the percentage graduated, and the percentage enrolled for graduate work. A third reason for the selection of the university grade as the representative measure is that it is a conservative measure. It can be seen from Charts 1 and 2 that the differences among the groups were smaller on this than on the other measures, and this insures a higher degree of significance for findings than if a more extreme measure were se-

lected.

The method used in this chapter for relating the university success and the initial characteristics of the housing groups is the comparison of the observed university grades with the grades predicted by the use of regression equations based upon the measures of the initial characteristics. When the characteristics of an individual or a group are known, regression equations furnish a means of predicting the most probable grades. The equations show the average change in grades for each unit change in the measures of characteristics. They do not give accurate statements of the grades that will be made, but merely the most probable grades. The accuracy of the prediction is shown by the standard error of estimate. If the standard error of estimate is large in comparison with the standard deviation of the predicted grades, the prediction will have little value, but if the standard error of estimate is small the prediction will have a high degree of accuracy. The computation of predicted grades based upon single measures is performed by means of the equations:

$$\begin{aligned}X_1 &= b_{xy}X_y + C \\b_{xy} &= r_{xy}SD_x/SD_y \\C &= M_x - b_{xy}M_y \\SD_{est} &= SD_x\sqrt{1-r_{xy}^2}\end{aligned}$$

In these equations  $X_1$  is the predicted grade,  $X_y$  is the measure of the initial characteristic of a single group,  $M_x$  is the mean university grade,  $M_y$  is the mean of the measure of any initial characteristic of the total,  $r_{xy}$  is the correlation coefficient between the university grade and the initial characteristic,  $SD_x$  is the standard deviation of the university grade,  $SD_y$  is the standard deviation of the measure of the initial characteristic used,  $b_{xy}$  is the regression coefficient for university grade on the measure of initial characteristic,  $SD_{est}$  is the standard error of estimate in the prediction of university grade, and  $C$  is a constant.

It is evident from these equations that the value of an initial characteristic for purposes of prediction depends largely upon the correlation coefficient. If the correlation coefficient is high the measure has considerable predictive value, but if it is low there is little predictive value. The correlation coefficients between university grades and high school grades were .525 for the men and .452 for the women; between university grades and psychological examination scores they were .440 for the men and .436 for the women; and between university grades and high school personality rating they were .331 for the men and .347 for the

women. These three measures have considerable predictive value.

The correlation coefficients between university grades and age of entrance were  $-.154$  for the men and  $-.123$  for the women. The standard deviations of the university grades were  $1.41$  for the men and  $1.28$  for the women. The substitution of these values in the equation gave values to the standard error of estimate of  $1.39$  and  $1.27$  for the men and women respectively. These were almost as large as the standard deviations, which show that the age of entrance had almost no value for prediction. Another way of expressing the predictive value of a single score is by the improvement over chance prediction. This is given by the formula,  $I_p = 100(1 - \sqrt{1-r^2})$ . This gave an improvement over chance in the prediction of average grades from the age of entrance of only  $1.2$  per cent for the men and  $0.75$  per cent for the women, which were both insignificant. The correlation ratios between university grades and the education of the parents were  $.115$  for the men and  $.160$  for the women, and those between university grades and the occupation of the fathers were  $.114$  and  $.155$  respectively. These measures had practically no value for prediction of university grades. The measures of the personality schedule were not used because they were available for only part of the students. There were, therefore, only three measures usable for prediction.

#### High School Grades

The comparison of the university grades made by the housing groups with the grades predicted by the use of regression equations based upon high school grades is shown in Table XXIV and additional data on which the computations were based are given in the Appendix. The standard deviation of the difference between the university grades and the predicted grades was computed by the formula for the difference of correlated means, using the standard deviation of the university grades, the standard error of estimate of the predicted grades, and the correlation coefficient of university grades and high school grades. The ratio of the difference between the university grades and the predicted grades is given in the last column. The residence hall groups made grades<sup>1</sup> significantly above the predicted grades and the rooming house group of women made grades significantly below the predicted grades.

#### Psychological Examination

The comparison of the university grades made by the housing groups with the grades predicted by the use of regression

---

<sup>1</sup>"Grades" are in terms of the point-major ratio.



TABLE XXIV

UNIVERSITY GRADES OF HOUSING GROUPS COMPARED WITH  
GRADES PREDICTED FROM HIGH SCHOOL GRADES

| Housing Groups      | University<br>Grades | Predicted<br>Grades | University<br>Less<br>Predicted | <u>Difference</u><br>SD<br>dif. |
|---------------------|----------------------|---------------------|---------------------------------|---------------------------------|
| Men                 |                      |                     |                                 |                                 |
| Rooming House.....  | 2.44                 | 2.64                | -.20                            | 1.6                             |
| Chapter House.....  | 2.56                 | 2.67                | -.11                            | 1.5                             |
| Home.....           | 2.65                 | 2.67                | -.02                            | .4                              |
| Residence Hall..... | 3.57                 | 2.91                | .66                             | 3.6                             |
| Women               |                      |                     |                                 |                                 |
| Rooming House.....  | 2.24                 | 2.74                | -.50                            | 4.5                             |
| Home.....           | 2.71                 | 2.71                | .00                             | .0                              |
| Residence Hall..... | 3.17                 | 2.81                | .36                             | 3.4                             |

equations based upon psychological examination scores is shown in Table XXV and additional data are given in the Appendix. The residence hall group of men made grades significantly above the predicted grades and the rooming house group of women made grades

TABLE XXV

UNIVERSITY GRADES OF HOUSING GROUPS COMPARED WITH  
GRADES PREDICTED FROM PSYCHOLOGICAL EXAMINATION

| Housing Groups      | University<br>Grades | Predicted<br>Grades | University<br>Less<br>Predicted | <u>Difference</u><br>SD<br>dif. |
|---------------------|----------------------|---------------------|---------------------------------|---------------------------------|
| Men                 |                      |                     |                                 |                                 |
| Rooming House.....  | 2.50                 | 2.64                | -.14                            | .9                              |
| Chapter House.....  | 2.60                 | 2.79                | -.19                            | 2.4                             |
| Home.....           | 2.73                 | 2.77                | -.04                            | .8                              |
| Residence Hall..... | 3.45                 | 2.89                | .56                             | 3.0                             |
| Women               |                      |                     |                                 |                                 |
| Rooming House.....  | 2.22                 | 2.67                | -.45                            | 3.8                             |
| Home.....           | 2.70                 | 2.73                | -.03                            | .6                              |
| Residence Hall..... | 3.18                 | 2.96                | .22                             | 2.0                             |

significantly below the predicted grades. The chances were 43 to 1 that the grades made by the residence hall group of women were higher above the predicted grades than would have resulted from chance, and the odds were 121 to 1 that the grades made by the chapter house group of men were farther below the predicted grades than would have resulted from chance.

#### High School Personality Rating

The comparison of the university grades made by the housing groups with the predictions based upon high school personality ratings is shown in Table XXVI and additional data are given in the Appendix. The residence hall groups of men and women made grades significantly above the predicted grades and the rooming house group of the women made grades significantly below the predicted grades. The odds were 43 to 1 that the grades made by the chapter house group of men were farther below the predicted grades than would result from chance.

TABLE XXVI

#### UNIVERSITY GRADES OF HOUSING GROUPS COMPARED WITH GRADES PREDICTED FROM PERSONALITY RATINGS

| Housing Groups      | University Grades | Predicted Grades | University Less Predicted | <u>Difference</u><br>SD<br>dif. |
|---------------------|-------------------|------------------|---------------------------|---------------------------------|
| Men                 |                   |                  |                           |                                 |
| Rooming House.....  | 2.48              | 2.63             | -.15                      | .9                              |
| Chapter House.....  | 2.63              | 2.83             | -.20                      | 2.0                             |
| Home.....           | 2.68              | 2.71             | -.03                      | .5                              |
| Residence Hall..... | 3.77              | 2.88             | .89                       | 3.0                             |
| Women               |                   |                  |                           |                                 |
| Rooming House.....  | 2.21              | 2.74             | -.53                      | 3.0                             |
| Home.....           | 2.65              | 2.71             | -.06                      | 1.0                             |
| Residence Hall..... | 3.14              | 2.77             | .37                       | 2.8                             |

#### Prediction by Multiple-Regression Equations

The high school grades, psychological examination scores, and high school personality ratings were combined in regression equations for the prediction of the probable grades. This comparison of the housing groups by relating the predicted grades to the university grades is shown in Table XXVII and additional data are given in the Appendix. The residence hall groups of men and women

TABLE XXVII

UNIVERSITY GRADES OF HOUSING GROUPS COMPARED WITH GRADES  
PREDICTED FROM A COMBINATION OF HIGH SCHOOL GRADES,  
PSYCHOLOGICAL EXAMINATION, AND PERSONALITY RATING

| Housing Groups      | University<br>Grades | Predicted<br>Grades | University<br>Less<br>Predicted | Difference<br>SD<br>dif. |
|---------------------|----------------------|---------------------|---------------------------------|--------------------------|
| Men                 |                      |                     |                                 |                          |
| Rooming House.....  | 2.44                 | 2.54                | -.10                            | .9                       |
| Chapter House.....  | 2.56                 | 2.72                | -.16                            | 2.1                      |
| Home.....           | 2.63                 | 2.66                | -.01                            | .2                       |
| Residence Hall..... | 3.57                 | 2.98                | .59                             | 3.2                      |
| Women               |                      |                     |                                 |                          |
| Rooming House.....  | 2.24                 | 2.68                | -.44                            | 4.2                      |
| Home.....           | 2.71                 | 2.72                | -.01                            | .2                       |
| Residence Hall..... | 3.17                 | 2.88                | .29                             | 2.7                      |

made grades significantly above the predicted grades and the rooming house group of women made grades significantly below the predicted grades. The odds were 55 to 1 that the grades made by the chapter house group were farther below the predicted grades than would result from chance.

The use of the regression equations eliminated the influence of the differences in initial characteristics as measured by high school grades, psychological examination scores, and personality ratings. After thus eliminating the influence of the initial quality of the housing groups it appeared that the typical man student made grades averaging .75 grade points higher if he resided in the residence hall rather than in the chapter house, .69 higher than in the rooming house, and .60 higher than in the home. Since the other measurable influences have been held constant, this is a measure of the relation between student housing and scholastic success. The typical woman student made grades averaging .73 grade points higher if she resided in the residence hall rather than in the rooming house and .30 higher than in the home.

The number of students in the different types of housing varied widely. There were 2,136 of the total group of 3,345 who lived at home during their entire time of university residence. However, the number in each of the other types of housing were large enough to be significant. There were 382 in the rooming

houses, 339 in the fraternity chapter houses, and 263 in the residence halls, besides the 225 who changed from one type of housing to another.

The multiple correlation coefficient for the three measures was .606 for the men and .575 for the women. These are the maximum correlations obtainable between the university grades and the grades predicted from a combination of the three measures of initial characteristics. The validity of the multiple correlation coefficient,  $R_1(234)$ , is found by comparing it with the  $R$  which would be obtained from fluctuations in sampling alone. The formula for this is  $R = \sqrt{(n-1)/N}$ , in which " $n$ " is the number of factors considered and " $N$ " is the number of students.<sup>1</sup> This gave values for  $R$  of .044 for the men and .050 for the women. This shows that only a small part of  $R_1(234)$  could have been the result of random sampling.

The relatively low multiple correlation shows that there are other considerations which affect the relationship between initial characteristics and university attainment. University grades are not an exact measure of student attainment. High school grades, psychological examination scores, and personality ratings are imperfect measures of initial student characteristics. There are also other factors such as the interests of students, the effort put forth, the conditions favoring application, and the freedom from distractions which affect the outcome. Student housing influences these factors.

Regression equations were calculated for each of the housing groups separately. These are given in the Appendix. These equations were used for predicting the grades of the other groups. The regression equation for any one of the groups was affected by both the university grades and the initial characteristics of that group. When this equation was used to predict the grades of another group the predicted grade was affected only by the characteristics of the second group and therefore provided a comparison of the relation of the different types of housing to university grades. If the students in one type of housing made higher grades than those predicted by the use of the regression equation of a second type of housing it indicated the difference of the two types of housing. On the other hand, if the students of the second type made lower than those predicted by the use of the equation of the first type that also indicated the difference of the two types of housing, assuming in each case that no other factors were operat-

---

<sup>1</sup>Henry E. Garrett, Statistics in Psychology and Education, p. 239. New York: Longmans, Green & Co., 1926.



ing. The actual grades of the men in each type of housing and the grades predicted by the use of the regression equations for the other types of housing are given in Table XXVIII. The actual grades are underscored.

**TABLE XXVIII**  
**ACTUAL GRADES OF MEN OF HOUSING GROUPS AND GRADES**  
**PREDICTED BY USE OF REGRESSION EQUATIONS**  
**OF EACH OF THE OTHER GROUPS**

| Housing Group       | Regression Equations Used for Prediction |               |             |                |
|---------------------|------------------------------------------|---------------|-------------|----------------|
|                     | Rooming House                            | Chapter House | Home        | Residence Hall |
| Rooming House.....  | <u>2.44</u>                              | 2.46          | 2.56        | 3.32           |
| Chapter House.....  | 2.54                                     | <u>2.36</u>   | 2.72        | 3.31           |
| Home.....           | 2.54                                     | 2.50          | <u>2.66</u> | 3.32           |
| Residence Hall..... | 2.69                                     | 2.82          | 2.91        | <u>3.57</u>    |

Another way of expressing the relationship between type of housing and university success is that the difference between the grades predicted for one group by the use of the prediction equation of a second group and the actual grades of the second group is the measure of the difference in the success of the two groups because of differences in initial characteristics. The difference between the actual grades of the two groups less the difference due to initial selection is the measure of the differences in the type of housing. For example, the grade predicted for the rooming house group by the use of the residence hall equation was 3.32. This was .25 point-major ratio below the actual residence hall grade. This represented the amount of the difference between the two groups because of initial selection. The difference between the actual grades of the two groups was 1.13. The difference between the residence hall and the rooming house as measured by the difference in university grades was therefore 1.13 less .25 or .88. The same result is obtained by subtracting the actual grade made by the rooming house group from the grade predicted for the rooming house group by the residence hall equation. The data on the differences of the different types of student housing are given in Table XXIX. The residence hall had a differential of .88 point-major ratio over the rooming house, .75 over the chapter house, and .66 over the home. The home had a differential of .12 over the rooming house and of .16 over the chapter house. The chapter house had a differential of .02 over the rooming house.

TABLE XXIX

DIFFERENCES OF GRADES OF STUDENTS AS RELATED TO  
INITIAL SELECTION AND TO TYPE OF HOUSING

|                                     | Initial<br>Selection | Type of<br>Housing | Total |
|-------------------------------------|----------------------|--------------------|-------|
| Residence Hall over Rooming House.. | .25                  | .88                | 1.13  |
| Residence Hall over Chapter House.. | .26                  | .75                | 1.01  |
| Residence Hall over Home.....       | .25                  | .66                | .91   |
| Home over Rooming House.....        | .10                  | .12                | .22   |
| Home over Chapter House.....        | -.06                 | .16                | .10   |
| Chapter House over Rooming House... | .10                  | .02                | .12   |
| Average.....                        | .15                  | .43                |       |

The differences in the success of the groups which were related to student housing were in every case greater than the differences related to initial selection. The average of the differences related to student housing was nearly three times the average of the differences related to initial selection. If those who lived in the rooming houses had lived in the residence halls they would have made 36 per cent higher grades than they actually did, assuming that other factors remained constant. Similarly, those who lived in the chapter houses would have made 29 per cent higher grades if they had lived in the residence halls, and those who lived in the homes would have improved 25 per cent by a change to the residence halls if the same relation between grades and type of housing continued. If the students who lived in the chapter houses and rooming houses had lived in the homes they would have made grades respectively 6 per cent and 5 per cent higher.

#### Chapter Summary

The actual grades made by the housing groups have been compared with the grades predicted by the use of regression equations. These equations were based upon high school grades, psychological examination scores, and high school personality ratings taken separately, and upon a combination of the three. This comparison showed that the residence hall groups made grades significantly above the predicted grades, the home groups approximated the predicted grades, and the chapter house and rooming house groups made grades below the predicted grades. The multiple correlation coefficient showed that the factors studied made up only part of the factors affecting success in the university, but indicated a high

degree of validity for them.

Regression equations were calculated for each of the housing groups of men separately. Each of these equations was then used to predict the grades of the other housing groups. This procedure gave a direct quantitative measure of the amount of difference between any two groups due to differences in initial ability and the amount of difference due to housing. This comparison showed that the residence hall group was positively above the other types of housing in its relation to the success of its students. The home was superior to both the chapter house and the rooming house.

CHAPTER VI  
RELATION OF HOUSING TO SUCCESS  
OF FRATERNITY MEMBERS

It is not the purpose of this investigation to study the relationship of fraternity membership to university success. It is concerned only with the problem of student housing. One approach to this problem is the comparison of fraternity members living in the chapter houses with fraternity members not living in the chapter houses. Whether fraternity membership exerts a detrimental or a beneficial influence upon university success, that influence would not affect the comparative success of different groups of the members. Of the old plan students investigated, 279 members lived in the chapter houses, 402 members lived in other types of housing, and 66 members changed type of housing. Those living in the chapter houses and those living outside are compared in this chapter and those who changed type of housing are considered in the next.

The data for the comparison of the fraternity members in the chapter houses with the fraternity members outside of these houses are given in Table XXX. The scores are given for both groups both for the measures of student characteristics and for the measures of university success. The differences between these scores were obtained by subtracting the score of the outside members from the score of the chapter house members. Therefore, if the chapter house members had a higher score than the outside members the difference was positive, but if the outside members had a higher score than the chapter house members the difference was negative. To make them comparable the differences were divided in each case by the standard deviation. The measures used for the comparison were the same as those previously considered for the housing groups.

The differences between the chapter house members and the members in other types of housing on the measures of student characteristics were in favor of the chapter house residents. On high school grades, high school personality rating, and the proportion from the professional and commercial occupations the chapter house members were markedly superior to the others and on the psychological examination score and the proportion of parents who were college graduates they were somewhat superior.

The chapter house members were inferior to the others on



TABLE XXX

COMPARISON OF FRATERNITY MEMBERS IN CHAPTER HOUSES WITH  
MEMBERS OUTSIDE IN TERMS OF STANDARD DEVIATIONS

| Measures of Student Characteristics      |               |                 |                          |
|------------------------------------------|---------------|-----------------|--------------------------|
|                                          | Chapter House | Outside Members | $\frac{C-O}{SD}$<br>dif. |
| High School Grades.....                  | 88.7          | 87.9            | .7                       |
| Psychological Examination Score.....     | 149.1         | 148.3           | .5                       |
| High School Personality Rating.....      | 75.0          | 70.9            | 10.8                     |
| Age of University Entrance.....          | 18.7          | 18.6            | 2.3                      |
| Proportion Parents College Graduates...  | 13.4          | 13.3            | .3                       |
| Professional and Commercial Occupations  | 40.3          | 38.3            | 4.1                      |
| Measures of University Success           |               |                 |                          |
| Number Terms Completed in the University | 7.88          | 8.91            | - 9.5                    |
| Number Courses Completed per Term.....   | 2.74          | 2.78            | - 2.2                    |
| University Grades.....                   | 2.56          | 2.65            | - 7.5                    |
| Proportion in Residence.....             | 7.2           | 12.4            | -17.2                    |
| Proportion Graduated.....                | 39.9          | 47.0            | -14.3                    |
| Proportion Enrolled Advanced Work.....   | 14.3          | 22.4            | -20.6                    |
| Scholastic Honors per 100 Students.....  | 28.0          | 32.0            | - 4.9                    |
| Student Participation per 100 Students.  | 40.8          | 46.7            | -12.8                    |

the measures of university success, and the differences in terms of the standard deviation were large enough to be decisive. The chapter house members attended fewer quarters than the others, completed fewer majors per quarter, and made lower university grades. They had a smaller proportion of their members still in residence, a smaller proportion had graduated, and a smaller proportion had enrolled for advanced work after graduation. They had won fewer scholastic honors per one hundred students, and even in student participation in university activities they were below their brothers outside the chapter houses.

The outside members have been considered together because there were few members in the rooming houses and residence halls. Of the 402 fraternity members who lived outside the chapter houses, 377 lived in the homes, 18 in rooming houses, and 7 in the residence halls. The averages were computed for the fraternity members who lived at home but these deviated little from the totals for the outside members.

#### Summary

The fraternity members who lived in the chapter houses were somewhat superior to the other members in initial characteristics, but the outside members excelled the chapter house members on the measures of university success. The ratio of the differences to the standard deviation of the differences showed that the differences could not have been the result of chance selection.

## CHAPTER VII

### RELATION OF CHANGE OF TYPE OF HOUSING TO UNIVERSITY SUCCESS

There were 149 of the old plan students who changed type of housing during their residence at the University of Chicago. These have not been included in the comparisons which have been made, except in the totals. The largest number of changes were from the home to some other type of housing, a total of 76. Twenty-seven changed from the rooming houses, 18 from the residence halls, 12 from the fraternities, and 16 changed more than once. Of those who changed, the chapter houses received 48, the rooming houses 34, the residence halls 28, and the home 23.

The university grades made by each student for each quarter were compiled. These grades were then averaged for each type of housing in terms of the point-major ratio. The data are given in Table XXXI. The number of students who made each change is

TABLE XXXI  
RELATION OF CHANGE OF TYPE OF HOUSING TO  
UNIVERSITY GRADES OF STUDENTS

| Change of Housing               | Number | Number Quarters |                | Grades Made In |                |
|---------------------------------|--------|-----------------|----------------|----------------|----------------|
|                                 |        | First Housing   | Second Housing | First Housing  | Second Housing |
| Home to Rooming House.....      | 26     | 5.5             | 3.5            | 3.26           | 2.76           |
| Home to Fraternity.....         | 31     | 5.0             | 4.9            | 3.22           | 3.29           |
| Home to Residence Hall.....     | 19     | 5.9             | 4.6            | 3.57           | 3.69           |
| Rooming House to Home.....      | 6      | 6.0             | 5.8            | 3.83           | 3.65           |
| Rooming House to Fraternity.... | 13     | 3.6             | 4.2            | 3.60           | 3.25           |
| Rooming House to Residence Hall | 8      | 4.0             | 4.9            | 3.51           | 3.76           |
| Fraternity to Home.....         | 9      | 4.8             | 3.8            | 2.48           | 2.73           |
| Fraternity to Rooming House.... | 2      | 3.5             | 6.0            | 2.66           | 3.39           |
| Fraternity to Residence Hall... | 1      | 9.0             | 3.0            | 1.99           | 3.20           |
| Residence Hall to Home.....     | 8      | 4.5             | 4.6            | 2.91           | 3.82           |
| Residence Hall to Rooming House | 6      | 5.7             | 5.2            | 3.36           | 3.17           |
| Residence Hall to Fraternity... | 4      | 6.2             | 4.0            | 4.09           | 3.16           |

given and the average number of quarters spent in each type of housing. The number of quarters spent in each type of housing is not a measure of the desirability of the type of housing but merely indicates the length of time on which the average grade was

based. The differences in the length of time in the different types of housing are not great enough to be significant. The average grade made in the first type of housing and in the second type of housing are given. Those who changed from other types of housing to the residence hall showed an improvement in their grades and those who changed from the residence hall to other types showed a decrease except for the eight students who changed from the residence hall to the home. Those who changed from the rooming house to the chapter house made lower grades and those who changed from the chapter house to the rooming house made higher grades. Those who changed from home to rooming house made lower grades, but those who changed from rooming house to home also made lower grades.

The numbers of students making the changes shown in the detailed comparisons were too small to insure significance. Therefore, the grades made in each type of housing were combined. The data for this combination are given in Table XXXII. The number of

TABLE XXXII  
COMPARISON OF STUDENTS WHO CHANGED TYPE OF HOUSING  
ON TIME SPENT IN EACH AND AVERAGE GRADE MADE

| Type of Housing     | Number | Number Quarters<br>in Each Type | Average Grade Made<br>in Each Type |
|---------------------|--------|---------------------------------|------------------------------------|
| Rooming House.....  | 76     | 3.9                             | 3.31                               |
| Chapter House.....  | 66     | 4.5                             | 3.14                               |
| Home.....           | 114    | 5.2                             | 3.40                               |
| Residence Hall..... | 63     | 4.3                             | 3.55                               |

students in each type of housing varied from 63 to 114 and the number of quarters in each type of housing varied from 3.9 to 5.2. There were 63 students who spent an average of 4.3 quarters in the residence halls and made an average grade of 3.55. There were 66 students who spent an average of 4.5 quarters in the chapter houses and made an average grade of 3.14. In the home the students made an average of 3.40 and in the rooming house of 3.31. Each of the students considered in this comparison had lived in at least two types of housing, so other considerations which might have affected the success of the students were largely eliminated. The initial characteristics of the students did not enter into the comparison, for the same students were in the different types of housing.

The results in this comparison do not correspond exactly



with the results in the preceding comparisons because the students spent but a limited time in each type of housing. However, this furnishes additional evidence that the residence hall was the type of housing associated with the greatest university success and the chapter house with the least success.

## CHAPTER VIII

### SUMMARY AND CONCLUSIONS

#### Review of Literature

The chief types of student housing are private homes, rooming houses under private management, residence halls maintained by the colleges, and chapter houses owned or controlled by fraternities or sororities. It is the consensus of opinion in recent literature that rooming houses managed for private profit are unfavorable to the scholastic and social welfare of the students. It is the opinion of the majority of administrators that college residence halls under proper management fill a real need in American education. The chapter houses of fraternities and sororities provide college homes for about one-fourth of the undergraduates, but the opinions in regard to the advantages and disadvantages of these chapter houses differ radically all the way from enthusiastic support to bitter opposition. The fraternity members of a few years ago were admittedly below the other students in scholarship, but the national fraternities, in particular, have attempted to improve the scholarship of their members though the records are not conclusive as to the degree of success attained. In most of the discussions no distinction has been made between membership in a fraternity or sorority and residence in a chapter house.

#### Views Toward Education

The attitude of any person toward student housing is conditioned by his attitude toward higher education. If he holds the aristocratic view that higher education is concerned only with the training of intellectual leaders he will attach little importance to student housing. Unfavorable housing conditions might assist by helping to eliminate the students least able to meet the difficulties. If, however, a person holds that higher education is democratic in aim and directed toward the social development of the many, he will recognize student housing as a vital factor. He will hold that the college has a custodial function and is as responsible for securing proper student housing as for providing proper classroom instruction. The recent literature has stressed the idea that the conditions of student housing should contribute to a well-rounded education.

#### Success of the Housing Groups

The comparison of the housing groups on the gross measures

of university success has shown that the residence hall groups of men and women were the most successful. This was true for both the old and new plan students. The home groups were second in university success. The rooming house groups of men and women under both the old and the new plans were the least successful as indicated by the gross measures of success without consideration of the initial characteristics of the groups. The chapter house groups were slightly above the rooming house groups. The correlation ratio and the contingency techniques have shown that the differences were significant.

#### Comparison of the Initial Characteristics and University Success of the Housing Groups

To determine whether the differences in success were due to differences in the quality of the groups or to differences in the desirability of the types of student housing, the success of the housing groups has been compared with the measures of initial student characteristics. This comparison has shown that the residence hall groups were the most successful in comparison with their initial characteristics. Their initial characteristics were somewhat above those of the other groups but their success was above the promise of their initial characteristics. The home groups were second in comparative success. The rooming house group of the women and the chapter house group of the men were the least successful in comparison with their initial characteristics.

The comparison of the university grades of the housing groups with the grades predicted by regression equations based upon the measures of initial characteristics showed that, when the differences in initial characteristics were allowed for, the typical man student made an average .60 grade points per major higher in the residence hall than in the home, .69 higher in the residence hall than in the rooming house, and .75 higher in the residence hall than in the chapter house. He made .09 higher in the home than in the rooming house, .15 higher in the home than in the chapter house, and .06 higher in the rooming house than in the chapter house. The typical woman student made grades .30 points higher per major in the residence hall than in the home, .73 higher in the residence hall than in the rooming house, and .43 higher in the home than in the rooming house.

Relation of chapter houses to the success of fraternity members.- The fraternity members who lived in the chapter houses were compared with fraternity members who lived in other types of housing. In the quality of members as measured by initial characteristics the chapter house members were somewhat superior to the other members, but they were less successful in the university as

shown by each of the measures of success than were their brothers who lived outside the chapter houses.

Relation of change of type of housing to university success.- The grades of the old plan students who changed from one type of housing to another were totaled for each type of housing. The factor of initial characteristics did not enter into this comparison, for the same students lived in different types of housing. The highest average grades were made in the residence halls, the second highest in the homes, the third in the rooming houses, and the lowest in the chapter houses.

#### Conclusions

This investigation has supplied quantitative data on the subject of student housing at the University of Chicago. The statistical interpretation of this data has given conclusive evidence that there is a correlation between student housing and university success. The different types of housing have been found to be associated with different degrees of university success.

The residence hall has been found to have the highest correspondence with success in the university. This association was apparent whether the success was measured by the gross averages of the criteria of success, by the quantitative comparison of the types of housing through the use of regression equations, or by the relation of change of type of housing to university success. The home was second by the same standards for measuring the relation of housing to university success. The rooming house and chapter house had the lowest correlation with university success. The poor success of the women in the rooming houses was especially apparent. The men in the chapter houses were somewhat superior to the average in ability, but their success was inferior. Also the members in the chapter houses achieved less than did the fraternity members in other types of housing, chiefly in the home. The students who changed type of housing made the lowest grades during the quarters they lived in the chapter houses. The only point on which the chapter houses excelled was in the extent of participation of its members in student activities, and even in this they were excelled by the students in the residence halls and by the fraternity members in other types of housing.

#### Educational Implications

The facts presented have shown that the type of housing of the students was correlated with university success. The differences in the success of the students in the different types of housing were great enough to make student housing compare in importance with other problems of student life. It is closely asso-



ciated with many of the problems of college or university--administrative, instructional, and social--and is worthy of serious attention by college and university authorities.

The relationship shown to exist between housing and success indicates that the University of Chicago could improve the efficiency of its educational program by exercising greater control over the housing of its students. If all the students could be housed in the university residence halls it would greatly enhance the value of its efforts. This is probably not possible because: (1) the University does not have sufficient residence halls to accommodate all the students, and (2) many of the students who live in Chicago probably could not attend the University if they could not continue to reside at home. However, it would be possible for the University to place restrictions on the rooming houses and chapter houses which would either improve their academic desirability or eliminate them.

#### Further Investigations Needed

This investigation has been confined to a factual study and interpretation of the degree of university success secured by each housing group, the initial characteristics of the groups, and the relation between the initial characteristics and university success of these groups. There is need for additional studies of which the following are suggestive:

1. Additional measures of initial characteristics may be investigated. Though the measures used were broad in scope, there may be significant differences in the groups which were not adequately measured by any of the criteria used in this study.

2. The reasons why the students choose one type of housing in preference to others may be learned. These might disclose important differences among the groups--temperamental, social, or economic.

3. The social influence of the types of housing could be studied. This is an important field not covered by the consideration of university success.

4. The reasons for the superiority or inferiority of one type of student housing to another may be determined. If the causes of the superiority or inferiority were known it would enable the University to improve its efficiency by improving student housing in general, and, if necessary, by eliminating some types.









